

PREFACE

Traditional disaster preparedness has been based on perceived hazards and potential consequences. Disasters in America have been notable for surprisingly little loss of life, despite extensive property loss. The terrorist attacks on the World Trade Center and the Pentagon irrevocably changed the conventional perspective, leaving many Americans emotionally scarred, and transforming the prevailing attitude of the entire nation from one of security and invincibility to one of vulnerability. The fact that America is not immune to attacks, destruction, and devastation by terrorists has become the harsh reality.

The posting of anthrax laden envelopes in the fall of 2001 further heightened the societal anxiety produced by that fateful day in September. Unfortunately, intentional use of biological agents is but one additional threat to public health. In the past 25 years, over 30 new diseases caused by highly virulent pathogens have been discovered, and our increasingly aged population, the widespread use of chemotherapeutic agents and immunosuppressants, and the growth of the percentage of the citizenry with immune systems naïve to old biological “enemies” have only served to further increase the possibility of significant public health emergencies or disasters in this country.

Even prior to 9/11, emergency response personnel were preparing and training in anticipation of the terrorist use of weapons of mass destruction (WMD). The events of 2001 highlighted the need for additional laws, training, material, and human resources to combat the forces committed to threaten the United States. With an increased sense of urgency, federal, state, and local governmental agencies, including the staff of the Missouri Department of Health and Senior Services, local public health departments, and hospitals, have risen to the challenge, and communities across the country, with federal guidance and assistance, have revised plans, acquired resources, and trained personnel in the unique and additional skills necessary to respond to disasters of all types, but especially those caused by chemical, biological, or radiological terrorism.

A logical “next step” is to exercise response organizations and personnel with realistic scenarios in order to hone collective skills, improve overall coordination, identify continued deficiencies, and continually improve readiness posture. In the event of a large scale public health emergency, the ability to request, access, receive, store, distribute, and dispense life-saving prophylaxis or treatment medications will be crucial in overall containment of the disaster and resolving the consequences. The purpose of this exercise handbook is to assist those in the public health and medical sectors involved with this aspect of emergency planning in achieving that goal.

Exercises allow health and medical participants to make mistakes without real-life adverse consequences. Working through the plans, strategies, and the collective effort of an exercise builds confidence and allows participants to get to know one another and develop positive working relationships. Since those involved in disaster preparedness and response must endure personnel changes or reassignments, technological advances, improved techniques and operational capabilities, and other evolutionary factors directly affecting their level of expertise, exercises, like all aspects of disaster preparedness, must be an on-going process.

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I. *Training Exercises*

INTRODUCTION

This handbook was developed to serve as a guide for the design and conduct of exercises in response to manmade and natural disasters affecting public health, and involving the Missouri Department of Health and Senior Services (MDHSS) as well as governmental, local public health agencies (LPHAs), and private health sector response organizations. It is directly applicable to exercises involving the reception, distribution, and dispensing of contents of the Strategic National Stockpile (SNS), but may also be used for public health emergency exercises not requiring these resources. Personnel of these organizations must have a clear understanding of their roles and responsibilities as well as those of the other response personnel with whom they will likely interact in responding to these crises.

PURPOSE

The purpose of this handbook is to assist in planning, preparing, conducting, and evaluating scenario-driven exercises in response to manmade and natural disasters that require a mass prophylaxis event.

The goal of scenario-driven exercises is to provide a safe, realistic environment in which response organizations may improve operational readiness and response for an actual incident. Exercises improve interagency coordination and collective skills, promote plan evaluations, and provide a forum to identify any shortcomings so they can be corrected prior to an actual incident.

Exercises can accomplish the following:

- ☐ Reveal planning weaknesses
- ☐ Identify resource gaps
- ☐ Expose training weaknesses
- ☐ Highlight equipment needs
- ☐ Improve coordination among the responding agencies
- ☐ Clarify roles and responsibilities
- ☐ Sustain and reinforce individual and collective skills

PHASES

An exercise consists of the following three phases:

- ❑ Pre-Exercise
- ❑ Execution
- ❑ Post-Exercise

The Pre-Exercise Phase includes planning and preparation and has the following 16 design steps:

- ❑ Step 1 – Assess Needs
- ❑ Step 2 – Conduct Initial Planning Conference
- ❑ Step 3 – Assess Capabilities
- ❑ Step 4 – Define Scope
- ❑ Step 5 – Write Purpose Statement
- ❑ Step 6 – Develop Planning Timeline
- ❑ Step 7 – Send Exercise Directive
- ❑ Step 8 – Organize Design Team
- ❑ Step 9 – Write Objectives
- ❑ Step 10 – Compose Narrative
- ❑ Step 11 – Develop Major and Detailed Events
- ❑ Step 12 – Determine Expected Actions
- ❑ Step 13 – Prepare Messages/Injects
- ❑ Step 14 – Write Player and Controller Handbooks
- ❑ Step 15 – Develop Exercise Plan
- ❑ Step 16 – Finalize

Chapter 2 discusses these 16 steps in detail.

The Execution Phase begins with the start of the actual exercise and concludes with the end of the exercise. During the Execution Phase, “players” participate in the exercise, which is controlled and evaluated according to the plan developed during the Pre-Exercise Phase.

The Post-Exercise Phase, beginning at the end of the exercise, covers the review process and the development of the after-action report (AAR). The review process provides valuable insight and lessons learned during the exercise, and may highlight additional training, staffing, and equipment needs. A properly conducted review allows participants to discuss among themselves what happened, why, and possible solutions. It also allows for peer review and feedback.

The Exercise Director, or his or her designee, should prepare a formal AAR that reflects the level of preparedness and overall response capability of the organizations involved. It may also be used as the foundation for future training and to prioritize corrective actions for deficiencies identified during the exercise.



II. *Exercise Planning*

INTRODUCTION

Well-planned and realistic SNS exercises yield high levels of preparedness. Personnel who have participated in well-planned and executed SNS exercises are much better prepared to cope with the myriad of issues and contingencies that must be confronted and resolved during a mass prophylaxis/vaccination event.

STEP 1 – ASSESS NEEDS

To be of value, SNS exercises must be done frequently and progressively. The best way to determine the type of exercise needed is to systematically study your situation. Start by taking a broad look at the problems in your geographical areas of responsibility. The purpose of the needs assessment is to define the problems to be resolved and identify specific functions to be exercised, based on the Missouri State Emergency Operation Plan (MO EOP), applicable Standard Operating Procedures (SOPs), and/or MDHSS Emergency Response and Terrorism Plan (Annex K 1.7, Mass Prophylaxis), or Local Emergency Response Plans including Local Annex H-Plan for Mass Prophylaxis. A careful examination of these documents can reveal whether organizations will be able to perform as prescribed. Past exercises and emergency AARs should be reviewed, as they typically identify shortcomings that will lend valuable insight into the capabilities of those departments and agencies discussed.

In conducting the assessment, exercise designers typically categorize their needs in five main areas (Hazards, Area, Functions, Agencies and Personnel, and Exercises) by asking the following questions:

Hazards

What type of incident is the most likely to occur?

- ☐ Natural disasters and emergencies
 - ☐ Food-borne outbreak
 - ☐ Flooding with well/potable water pollution
 - ☐ Outbreak of highly contagious, serious illness (e.g., meningococcal disease)
 - ☐ Overwhelming outbreak of an anticipated disease (e.g., pandemic influenza)
 - ☐ Animal disease outbreak (e.g., animal foot and mouth disease)

- Environmental emergency affecting health (e.g., wild land fire with air pollution)
- Infrastructure failures affecting health (e.g., power grid failure and heat illnesses)
- Chemical
 - Nerve agent (e.g., VX, Sarin)
 - Choking agent (e.g., Chlorine, Phosgene)
 - Blood agent (e.g., Hydrogen Cyanide, Potassium Cyanide)
 - Vesicant (e.g., Mustard, Lewisite)
 - Toxic industrial material release in a populated area
- Biological
 - Bacteria (e.g., Anthrax, Cholera, Plague)
 - Virus (e.g., Smallpox)
 - Rickettsia (e.g., Q fever)
 - Toxins (e.g., Botulinum, Ricin)
- Nuclear/Radiological
 - Radiological dispersion device (e.g., dirty bomb)
 - Nuclear facility
 - Nuclear device

Area

- What geographical areas or facilities are most vulnerable?
 - Types of facilities in the area
 - Federal/State/Local Government
 - Nuclear Plants
 - Refineries
 - Landmarks in the area
 - Large public gatherings
 - Transportation routes

Functions

- What EOPs, SOPs, established plans, or emergency management functions are most in need of rehearsal at the State and Local Level?
 - Mutual aid
 - Decontamination
 - Media relations
 - Incident Command System (ICS)/Joint Operation Center (JOC)
 - Medical surveillance
 - Epidemiological evidence-based decision making

- Receiving Staging and Storage Site (RSS)/Area Distribution Site (ADS) management
- Dispensing clinics
- Covert release detection
- Threat assessment
- Alert and notification
- Response plan
- Quarantine
- Communications
- Public health laboratories
- Evidence preservation
- Interagency coordination
- Emergency public information and warning
- Impact/damage assessment
- Emergency medical services
- Mass care
- Secondary inter-facility transport
- Mass prophylaxis/vaccination
- Management of SNS materiel
- Community psychological and pastoral care services
- Public safety
- Resource management
- Individual and family assistance
- Where have difficulties occurred in the past?
- Review AARs available from previous incidents or exercises

Agencies and Personnel

- ❑ What State, Local and Federal agencies and personnel need to participate in an exercise?
- ❑ Have any agencies updated their plans or procedures, changed policies or staff?
- ❑ What manpower can be expected to assist in the development of an exercise?
 - Local and State Public Health Agencies
 - Local officials
 - Local Hospitals
 - Local Fire Departments, Hazardous Materials Units
 - State and local law enforcement organizations (police, local field offices of the FBI)
 - Local Emergency Medical Services Systems agencies
 - Local and State Emergency Management Agencies
 - Other local emergency response organizations (e.g., public works)
 - Regional Transit Authorities

- Coroner
- Business and Industry
- Airport(s)
- Public Works
- Surrounding Jurisdictions
- Red Cross
- Volunteer Organizations
- Other state agencies (e.g., State Emergency Management Agency, Department of Agriculture Conservation, Corrections, Highway Patrol, etc)
- Department of Health and Human Services (DHHS)
 - Centers for Disease Control and Prevention (CDC)
 - Agency for Toxic Substances and Disease Registry (ATSDR)
- State Office of Homeland Security
- Department of Veteran Affairs (VA)
- Department of Defense
 - National Guard Civil Support Teams (CSTs)
- Department of Energy
- Environmental Protection Agency (EPA)
- US Department of Agriculture
- Others

Exercises

- What type of exercise should be conducted?
 - Orientation
 - Drill
 - Tabletop Exercise (TTX)
 - Command Post Exercise (CPX)/Functional Exercise (FX)
 - Field Training Exercise (FTX)/Full Scale Exercise (FSX)
- What experiences have personnel had with the various types of exercises?
- How much time can be allocated to developing an exercise?
- What are the monetary considerations and limitations?
- What type and quantity of refreshments will be needed?
- What physical facilities will be needed to conduct an exercise?
- How many dispensing sites will be exercised?
- Receiving, Staging, Storage (RSS) Site?
- Area Distribution Site (ADS)?

Once completed, a needs assessment should reveal the following:

- ❑ Problems that need to be solved
- ❑ Skills that need to be practiced
- ❑ New facilities, personnel, or equipment that has not been exercised
- ❑ Weakness or ambiguity in existing plans

STEP 2 – CONDUCT INITIAL PLANNING CONFERENCE

An initial planning conference, with all participating agencies and organizations, should be convened to reach an agreement on the overall exercise concept, objectives, date and location, and the level of commitment desired or expected from each agency. Participating agencies should come to the initial planning conference with the appropriate authority and preparation to discuss all of these issues. This conference is also a good time to provide the participants with a planning timeline.

STEP 3 – ASSESS CAPABILITIES, ROLES & RESPONSIBILITIES

It is imperative that the capabilities, roles and responsibilities of the participating agencies and organizations related to a mass prophylaxis event be reviewed prior to the exercise. An examination of the relevant SOPs/EOPs can reveal whether organizations will be able to assist you in carrying out your plan. Past exercises and actual emergency AARs should be reviewed, as they typically identify shortcomings that will lend valuable insight into the capabilities of those departments and agencies discussed. Determining the existence of specially trained units will assist in developing an exercise to test the capabilities of these unique or special resources. A thorough assessment of capabilities, roles and responsibilities can help identify shortcomings or gaps in response resources, and the exercise can be developed to identify where specific resources can be obtained or how procedures can be enhanced.

STEP 4 – DEFINE SCOPE

The fourth step in the exercise development process is to define the scope of the exercise. Defining the scope means putting realistic limits to it. It is not realistic to practice all operations in the context of all hazards using all agencies in an area that includes all possibilities. To define the scope of an exercise, refer to the needs assessment developed in Step 1. Consider those items that have the highest priority and can be reasonably addressed in one exercise.

Some factors to consider in defining the scope are expense, time constraints, availability of personnel or resources, seriousness of problem, and capability of the type of exercise to address the problem. The time and financial constraints of all the participants must be considered. The determination must be made whether the exercise will last a half day, a full day, or multiple days.

Available resources must be considered early on in the exercise planning and development process. Not only should you consider your own resources, but you should consider those of all participating organizations as well. Considerations such as whether the exercise will involve off-duty time for some of the participating organizations is a necessary consideration due to the inability for some agencies to pay for overtime due to budget constraints.

The following are five key elements of the scope of an exercise:

1. Functions
2. Personnel and resources
3. Incident type (Natural or Manmade)
4. When and where
5. Exercise type

The following are some thoughts that exercise planners should consider when planning and deciding on the type, scope, and size of a mass prophylaxis exercise involving multiple jurisdictions of first responders:

- ☐ What are the most important functions, procedures, or operations you want to exercise (three to five functions are sufficient)?
- ☐ What is the appropriate scenario for the exercise?
- ☐ Which type of exercise (i.e., TTX, CPX/FX, FTX/FSX) will be the most useful at this point in time?
- ☐ What agencies and personnel would benefit the most by participating in the exercise?
- ☐ What are the existing capabilities and limitations of the various participating emergency response agencies, departments, and organizations? Are participants being required to do something they do not have the capability to do or is out of their purview?
- ☐ What level of stress and complexity would be useful?
- ☐ Is requisite funding available for all aspects of the exercise?
- ☐ What is the availability of anticipated player organizations, departments, and agencies to participate in an exercise?
- ☐ What types of exercises have the participants conducted in the past? Has the selected exercise been preceded by simpler exercises as needed?
- ☐ Has the designated area been used for exercises in the past? Will the use of the designated area have any impact on traffic during the specified time period?
- ☐ To what extent can organizations participate in the exercise while minimizing the impact on normal response services?
- ☐ Can the exercise include the test of other EOPs/SOPs such as those of emergency response organizations, at the state and local level?

Developing a realistic scenario that will test the intended plans, actions, responses, or decision-making abilities is crucial to a successful exercise. A sample worksheet for the development of a scenario is provided in figure 2-1.

Scenario/Scope Worksheet

1. List the most likely Chemical, Biological, Radiological, Nuclear (CBRNE) or High-Yield Explosive attack in your area of operations.

2. What geographical areas or subdivisions are most vulnerable or likely to be the subject of attack?

3. List the agencies/departments from "most" to "least" in these three categories below:

Frequently In Operation _____

Experienced with Major Responses _____

Participation with Emergency Management Program _____

4. What types of personnel do you want to participate in the exercise?

_____ Policymaking (state and local elected officials)

_____ Coordination (managers, EOC representatives, state and local board members)

_____ Operations (field personnel, headquarters, staff level)

_____ Public representatives (media)

_____ Specialized response units

5. What type(s) of operations do you want to engage in?

6. Check the degree of stress, complexity, and time pressure you want to create in the exercise.

	High	Medium	Low
Stress	_____	_____	_____
Complexity	_____	_____	_____
Time Pressure	_____	_____	_____
Communication Mode	_____	_____	_____

Figure 2-1. Scenario/Scope Worksheet

STEP 5 – WRITE PURPOSE STATEMENT

The purpose statement identifies the relevancy of all aspects of a mass prophylaxis exercise. It is a broad statement of the goal of the exercise and can be used to communicate plans to superiors, peers, and anticipated exercise players. Once the scope of an exercise has been determined, the purpose statement is not difficult to prepare. Simply incorporate into a single sentence the problems that need to be solved; skills that need to be practiced; facilities, personnel, or equipment that will be exercised. The purpose statement should be clear and succinct. In actuality, the purpose statement summarizes the scope worksheet. The purpose statement further serves as the basis for writing objectives and the Exercise Directive. A sample purpose statement is provided in figure 2-2.

The proposed exercise is a FSX simulating a covert release of a biological agent at the ABC Government Office Complex in Metropolis, Missouri.

The purpose of the proposed SNS FSX exercise is to test and evaluate the following functions:

- ☐ Epidemiological Assessment/Investigation
- ☐ Coordination of a Mass Prophylaxis clinic
- ☐ Management of SNS Materiel
- ☐ Agent Identification
- ☐ Emergency Public Information

The following agencies and personnel will be involved:

- ☐ State/Local Public Health
- ☐ CDC
- ☐ State/Local Law Enforcement
- ☐ State and Local Emergency Management Agencies
- ☐ State and Local Emergency First Responders

Figure 2-2. Sample Purpose Statement

STEP 6 – DEVELOP PLANNING TIMELINE

The timeline provides a sequential list of major actions to be accomplished in the planning and development of the exercise and is used by the Exercise Director to schedule and track exercise milestones. The timeline should contain dates and timeframes for each of the major steps. It also allows design and development personnel to anticipate their workload and enables them to gauge their progress.

STEP 7 – SEND EXERCISE DIRECTIVE

An important means of getting support for an exercise during the planning phase is the Exercise Directive. An Exercise Directive is a letter or memo sent to each organization whose participation is requested in the exercise. It states the purpose of the exercise and its importance to the invitees, and asks for their participation. The Exercise Directive also establishes policies and procedures to be followed and facilitates the exercise development process.

STEP 8 – ORGANIZE DESIGN TEAM

The Design Team is comprised of representatives from the various organizations and entities that would normally be involved in the response to a public health emergency in the geographical area selected for the exercise. Representatives from the affected jurisdictions (state, region, and local) should be part of the Design Team. The Design Team is involved in the planning, execution, and evaluation of the exercise. The primary responsibility of this team is to design a realistic exercise that validates plans and procedures that would be implemented during a public health emergency.

STEP 9 – WRITE OBJECTIVES

Objectives take the purpose statement one step further by breaking down general purposes into specific objectives. Objectives give the exercise focus and identify exactly what is to be accomplished. Objectives are often difficult to develop, but there are a number of useful approaches. One is to remember that an objective states WHO will do WHAT action, under WHAT conditions, WHERE, and according to WHAT standard. Breaking down the purpose statement into its logical components may also derive exercise objectives. When writing objectives, consider response functions that have not been validated in prior exercises or ones that needed improvement based on previous exercises. Because they help keep everything that follows on track, exercise objectives need to be carefully crafted. Examples of exercise objectives are provided in figures 2-3 and 2-4. Objectives should have the following characteristics:

- ❑ Simple (do not try to cover too broad an area)
- ❑ Clear (so people can understand them)
- ❑ Specific (rather than vague)
- ❑ Measurable (so a determination can be made whether the objectives were achieved)

Examples of Exercise Objectives:

- ☐ Test the internal and external notification procedure of agency X
- ☐ Test the ability of agency X to timely establish dispensing sites
- ☐ Test the integration of agency X into the local emergency operations control
- ☐ Test the ability of agency X to deal with exposed victims
- ☐ Test the ability of agency X to deal with the worried well

Figure 2-3. Objective Examples

Standard SNS exercise Objective – Test the Plan's procedures for the following:

- ☐ Initial notification of response agencies and personnel
- ☐ Direction and control
- ☐ Incident assessment
- ☐ Resource management
- ☐ Communications
- ☐ Facilities and equipment
- ☐ Alert and notification of the public
- ☐ Emergency information – media
- ☐ Protective actions for the public
- ☐ Response personnel safety
- ☐ Traffic and access control
- ☐ Registration, screening, and prophylaxis of public and first responders
- ☐ Emergency Medical Services
- ☐ Mass casualty care
- ☐ Contamination cleanup
- ☐ Collection of evidence
- ☐ Incident documentation and investigation

Figure 2-4. Standard SNS exercise Objective

STEP 10 – COMPOSE NARRATIVE

The narrative is a brief scenario that sets the stage for the exercise. It describes the events that have occurred up to the moment the exercise begins. It is the basis for later events, actions, and decisions. A sample narrative is provided in figure 2-5. When developing a narrative, consider the following:

- ☐ What type of incident occurred?
- ☐ How was the notice of the event received (overt/covert)?
- ☐ Was there advance warning (threat or notice provided)?
- ☐ When did the event occur?
- ☐ What is the sequence of events?
- ☐ Where does it take place?
- ☐ What is the danger or level of threat?
- ☐ What response has been made?
- ☐ What injuries, illnesses, or damage are reported?
- ☐ What is the epidemiological data?
- ☐ What is predicted in the future?
- ☐ What are the relevant weather conditions?
- ☐ What other factors would influence emergency procedures?

Exercise developers often do not include all important information in the scenario, choosing to reveal additional information through various communications as the exercise unfolds. For example, an exercise involving a highly contagious disease may be designed such that the actual disease is not identified until certain actions are taken by exercise participants. Similarly, if this were developed as a bioterrorism event, the location and quantity of the released agents may be omitted from the scenario and provided to participants later. Such delays may be valuable in testing communications procedures or in providing more realistic scenarios.

Date: July 2004

On June 3rd, a concert to raise money for AIDS assistance in Africa was held at Kemper Arena, near Kansas City, MO. In addition to the 5,000 tickets sold through vendors and internet sales, an additional 8,000 tickets were sold at the gate, many for cash exchanges.

On the morning of June 5th, a family of four presented to the St. Luke's Hospital. All were suffering similar symptoms of fever, malaise, cough, shortness of breath, and pleuritic chest pain of 12 hours duration. The two children both had lobar pneumonia by radiograph, and all were oxygen deficient and had grossly elevated white blood cell counts. All were admitted to the hospital, one to the intensive care unit. A few hours later, a young man of 18 presented with nearly identical symptoms. By two o'clock, three more patients, all young adults, had arrived in the emergency department with similar symptoms. Because of the stark similarities, the emergency physician contacted the hospital infectious diseases (ID) specialist, relaying his concerns.

During his evaluation of these patients, the ID physician took a detailed chronological history, and the only common denominator he identified was that all those ill had attended the concert at Kemper Arena, except one individual, and that person lived within 0.5 miles of the arena. The specialist also reviewed sputum Gram stains from all patients: In addition to trace red blood cells, he noted Gram-negative bacilli.

At approximately the same time that these events were taking place, several local public health agencies (LPHAs) in the greater metropolitan Kansas City area were being called by other area hospitals reporting similar findings – an increase in the number of otherwise healthy young adults with relatively sudden onset of severe, progressive pneumonias, with the only common denominator being their attendance at the AIDS concert.

At four o'clock, the Director of the Kansas City LPHA called the Missouri Department of Health and Senior Services to report that an outbreak of a suspected biological agent appeared to exist in the Kansas City area.

Figure 2-5. Sample Narrative

STEP 11– DEVELOP MAJOR AND DETAILED EVENTS

The narrative should continue to be developed just as a novelist would do, developing the plot by creating chapter outlines. Include major and detailed events.

Events are realistic situations, either large or small, that occur as a result of the incident. They motivate the intended actions anticipated from the players during the course of the exercise. Major events are like chapter headings in a novel. The purpose of major events is to obtain a list of problems that require certain emergency functions to be addressed and will drive player actions. Detailed events are smaller issues requiring actions as a result of the major event. It is important to remember that events are issues requiring action, not the actions of the responders. Examples of major and detailed events are provided in figure 2-6.

Event: Biological Attack

Major Event: Agriculture sprayer dispenses unknown substance from a location adjacent to spectator stands at fairgrounds.

Detailed Events:

- ❑ People in the immediate area where the substance was released begin complaining of feeling bad and describe a variety of symptoms such as difficulty breathing and other less-specific complaints
- ❑ As the word spreads that some unknown substance was released, other people start complaining of non-specific symptoms
- ❑ The 911 Center begins receiving frantic calls from cell phones

Detailed Events:

- ❑ Hysterical people start showing up at the local hospital emergency rooms
- ❑ Hysterical calls are made to the 911 Center, jamming the system
- ❑ Frantic calls are made to the non-emergency numbers, since the 911 lines are busy
- ❑ Hospital staff is trying to call 911 and non-emergency numbers to find out what happened

Detailed Events:

- ❑ Examinations of the self-admitting patients show no signs of any chemical burns or irritations and the symptoms appear psychosomatic (the absence of a chemical burn or sign of injury supports the possibility that this could be a biological incident)

Figure 2-6. Sample Major and Detailed Events

STEP 12 – DETERMINE EXPECTED ACTIONS

Expected actions are those players should take based on the events (problems) with which they are presented. Expected actions are taken from published mass prophylaxis event SOPs/EOPs of the participating organizations. Determining those expected actions should not present a problem if personnel from these organizations are helping in the development of the exercise or if copies of SOPs/EOPs are available during the development phase. If not, it will be necessary to anticipate a correct response. Each detailed event should be designed to prompt one or more expected actions from one or more agency participating in the exercise. Evaluation of players and agencies during exercises is based on successful accomplishment of expected actions identified during this step.

Often, when it comes to expected actions, exercises tend to be too narrowly focused. By varying the types of actions in the exercise, it will be more interesting to all players.

STEP 13 – PREPARE MESSAGES/INJECTS

Messages are the method by which information is provided to the players by those controlling the exercise. In order for an exercise to proceed as planned, critical information must be revealed to players, who should then take actions based on this information. These players and their agencies are then evaluated based on (1) whether they do, in fact, take the expected actions, and (2) how well those actions are performed.

All messages have certain components: date, time, message sequence number, sender, receiver, method of transmission, and the message content. Messages keep everyone involved and distribute the activity among the participants.

Messages are means by which the expected actions are brought about, and in general take two forms – directive or informative. Directive messages either relay orders (“unit A go to site X”) or request information (“LPHA provide information on available SNS materiel.”). Informative messages provide data and allow the players to determine what, if any, actions should be taken based on that information. Messages keep the exercise “on track.” To ensure this happens, messages must come from believable sources and be delivered to the right person. A message from a concerned citizen on the street to the mayor recommending quarantine certainly would not cause a quarantine to take place (although it might force him to consider this). However, one from the LPHA or MDHSS would lead to the expected action.

A special form of message is the “inject.” An inject is a pre-developed message that may or may not be used in the exercise. Injects are optional messages, usually used in response to unanticipated actions by players, or to complicate the scenario if players are not being sufficiently challenged.

Most messages are pre-scripted, whether informative, directive, or if used as injects. Occasionally, spontaneous messages (otherwise known as ad hoc injects) may be used in response to unanticipated

actions of players as the result of scripted messages. Ad hoc injects should be used sparingly, since they may result in further unanticipated actions on the part of the player, and could result in loss of control of the exercise.

Messages may be presented in several ways. They may be read aloud, handed directly to the players, provided to a simulator to be the basis of a telephonic/spoken message, broadcasted on radio, or sent via email.

STEP 14 – WRITE CONTROLLER, PLAYER AND ACTOR HANDBOOKS

The Controller Handbook provides controllers with the necessary information to conduct the exercise. The handbook contains background information, a basic description of the exercise, and a Master Scenario Event List (MSEL). The final Controller Handbook is compiled just before the execution of the exercise.

The Player Handbook is a compilation of the information necessary for the players to understand the facts and circumstances of the exercise. The Player Handbook can contain maps, charts, graphs, assumptions, scenarios, and any other information necessary for the players to operate in as realistic an environment as possible. The content of the Player Handbook varies depending on the intensity, and thoroughness of the SNS exercise. Some SNS exercises are conducted in such a way that the information is not initially provided in the Player Handbook, but is made available when requested by the players or through messages or injects. The Exercise Director and Design Team determine the content of the Player Handbook.

If the exercise involves the use of role players (for example, exposed individuals, victims of a disaster or worried well), detailed instructions must be developed for their use. These may be simply single page instructional sheets, or more detailed schedules, itineraries, and specific actions to be taken at specific times or in response to anticipated actions by role players.

STEP 15 – DEVELOP EXERCISE PLAN

The Exercise Plan provides planners and controllers with the information required to conduct the exercise. It contains information on the exercise concept, objectives, assumptions, artificialities, rules, and responsibilities. The Exercise Plan also addresses safety, security, and logistical issues.

STEP 16 – FINALIZE

The final step provides the opportunity to review all preparations and arrangements for a particular exercise. A review of all documents, safety and security issues, logistics, control structure, and player and controller training dates should occur. Any unresolved issues or necessary changes should be dealt with at this step. A chart depicting the exercise sequence of tasks is provided in figure 2-7.

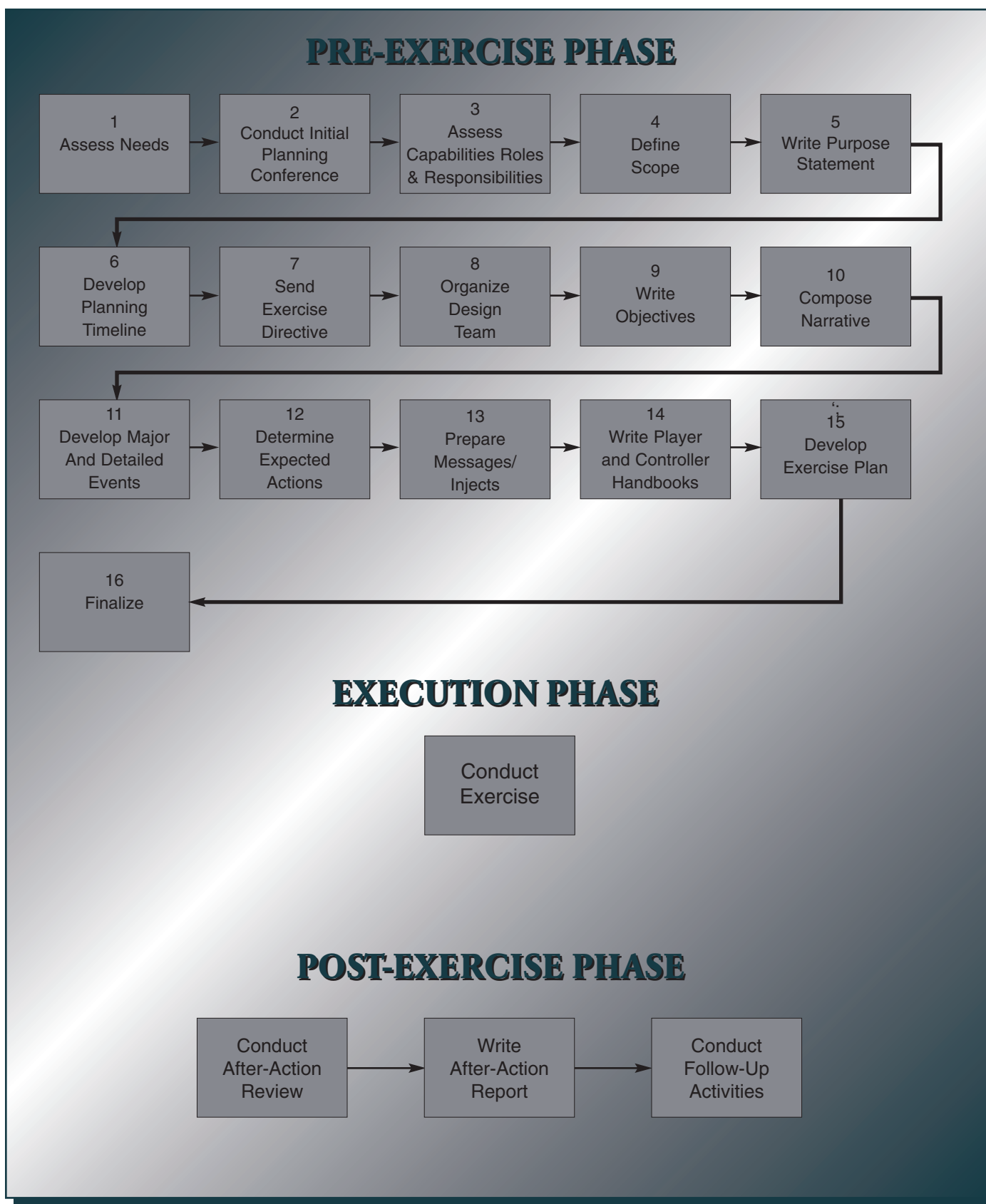


Figure 2-7. Exercise Sequence of Tasks



III. *Conduct of Training Exercises*

INTRODUCTION

Exercises are an important part of disaster preparedness. Five generally accepted types of exercises, progressing from simple to more complex, are as follows:

- ❑ **Orientation.** An orientation is a seminar-type activity intended to familiarize participants with responsibilities during an emergency. The facilitator may use a panel discussion, slide shows, or other modalities as teaching methods, and the session typically lasts about one hour.
- ❑ **Drill.** A drill is an exercise designed to evaluate, develop, or maintain skills involving a single emergency response function. It often involves deployment to a field environment. Its strength is its focus on a relatively limited portion of the response system, as there is no attempt to evaluate multiple functions.
- ❑ **Tabletop Exercise (TTX).** The TTX is a low stress, informal discussion of a simulated emergency. Time pressures are either reduced or eliminated. The TTX is useful for evaluating plans and procedures and resolving questions of coordination and responsibility.
- ❑ **Command Post Exercise (CPX) or SNS Functional Exercise (FX).** The CPX/FX takes place in real time, employs real people and equipment, and coordinates multiple agencies. The CPX/FX tests multiple emergency functions and usually involves a higher degree of stress than a TTX.
- ❑ **Field Training Exercise (FTX) or SNS Full-Scale Exercise (FSX).** The FTX/FSX takes place in real time, involves a realistic simulation, induces high stress, and emphasizes SNS functions among multiple agency response, policy, and coordination personnel.

Regardless of the type, exercises are an integral portion of the training process. Exercises are used to train individual and/or collective skills. The particular type of training exercise is selected based on the specific training objectives and available resources. For example, a local public health agency (LPHA) and its supporting community hospitals have decided to conduct an exercise together. Because they have not worked together in the past, one of the objectives for the exercise is to familiarize the agencies with each other's operations. In this situation, as will be outlined later in this chapter, a TTX would be the best selection.

The key questions to ask when selecting the type of exercise to conduct are as follows:

- ❑ Who will be trained?
- ❑ What are the training objectives?
- ❑ What are the time constraints?
- ❑ Which, if any, of the training exercises are most suitable to accomplish each objective?
- ❑ What are the available resources (time, training areas, or equipment)?
- ❑ Which of the training exercises or combination of them will help meet the training objectives within the available training resources?

This chapter describes the TTX, CPX/FX, and FTX/FSX and provides overviews of the characteristics and personnel requirements as well as Pre-Exercise, Execution, and Post-Exercise Phase activities required for each.

TABLETOP EXERCISE (TTX)

Description

TTXs typically involve key decision makers, senior staff, elected and/or appointed officials, or other key staff with emergency management responsibilities who gather in an informal setting to discuss simulated emergency situations as illustrated in figure 3-1. A TTX is intended to stimulate discussion of various issues concerning a hypothetical situation and the plans, policies, and procedures or systems guiding the response to and recovery from an event.

Participants will consider questions such as coordination, assignment of responsibilities, or post-event mitigation priorities. The TTX is conducted in a “no fault,” non-threatening, low-stress environment. It is an excellent format to use to familiarize newly assigned/appointed personnel and senior officials with established or emerging response and emergency management concepts and/or plans, policies, procedures, systems, and facilities. Though based on a simulated incident, there is no attempt at real-time constraints. The tabletop exercise emphasizes slow-paced problem solving rather than rapid, spontaneous decision-making. It can take three months or longer to properly plan for and develop a TTX.

Characteristics

Methodology

- ❑ Discussion through a facilitator
- ❑ Feedback from participants determines exercise effectiveness

Simulated Activities

- ❑ No utilization of equipment or deployment of resources
- ❑ All activities simulated
- ❑ Participants interact through discussion

Advantages

- ❑ Modest commitment in terms of time, cost, and resources
- ❑ Effective method of reviewing plans, procedures, and policies
- ❑ Acquaints participants with other agencies' SNS roles/responsibilities and procedures
- ❑ Identifies issues that can be corrected prior to an actual incident
- ❑ Can be used as a precursor to a FTX/FSX

Personnel

Players. Players (or participants) should include representatives from agencies or organizations who would actually be involved in an SNS response, such as medical and public health, fire, police, special response units, public works, Red Cross, mayor's office, etc. as shown in figure 3-1.

Facilitator. The success of any TTX rests completely with the facilitator. In addition to good facilitation skills, he or she must also have a complete understanding of SOPs/EOPs of participating organizations. Key facilitator actions include the following:

- ❑ **Setting the stage.** The facilitator should establish a relaxed atmosphere, stating the purpose and objectives, explaining ground rules, and presenting the narrative.
- ❑ **Managing the exercise.** The facilitator must be thoroughly familiar with exercise objectives, exercise ground rules, all messages and/or problem statements, and expected outcomes.
- ❑ **Guiding the discussion.** The facilitator must know when participant answers are not in accordance with plans and procedures. If this is the case, he or she must be able to develop discussion that determines the need to correct the participant or revise the plans or procedures.
- ❑ **Involving everyone.** This is accomplished by encouraging group problem solving. The facilitator, modeling good listening and response skills, will draw all participants into the exercise conversation.
- ❑ **Focusing on in-depth problem solving.** To do this, the facilitator asks open-ended questions, pushes past simplistic solutions, and ensures comments are documented.

A good facilitator not only needs to be a good speaker, but a good communicator and a diplomat as well.

Public Safety

- ☐ Federal/State/Local Law Enforcement
- ☐ Local Fire/EMS
- ☐ HAZMAT
- ☐ HMRTs/HMRU

Public Health

- ☐ Local/State/Federal Communicable Disease-Epidemiologist/Physicians
- ☐ State Health Department
- ☐ Department of Health and Human Services (DHHS)
- ☐ Centers for Disease Control and Prevention (CDC)
- ☐ Public Health Service
- ☐ US Army Medical Research Institute for Infectious Disease (USAMRIID)

Medical Response

- ☐ Hospital Administrators
- ☐ Hospital Emergency Managers
- ☐ Hospital Emergency Departments
- ☐ Department of Pathology
- ☐ Medical Examiners/Coroners
- ☐ Hospital Lab Coordinators

Emergency Management

- ☐ Local/State Emergency Management
- ☐ FEMA

National Guard

- ☐ Civil Support Teams (CSTs)

Others as Needed

- ☐ State Agencies (Highway Patrol, Agriculture, Conservation, Corrections)

Figure 3-1. Sample Listing of Potential Exercise Participants

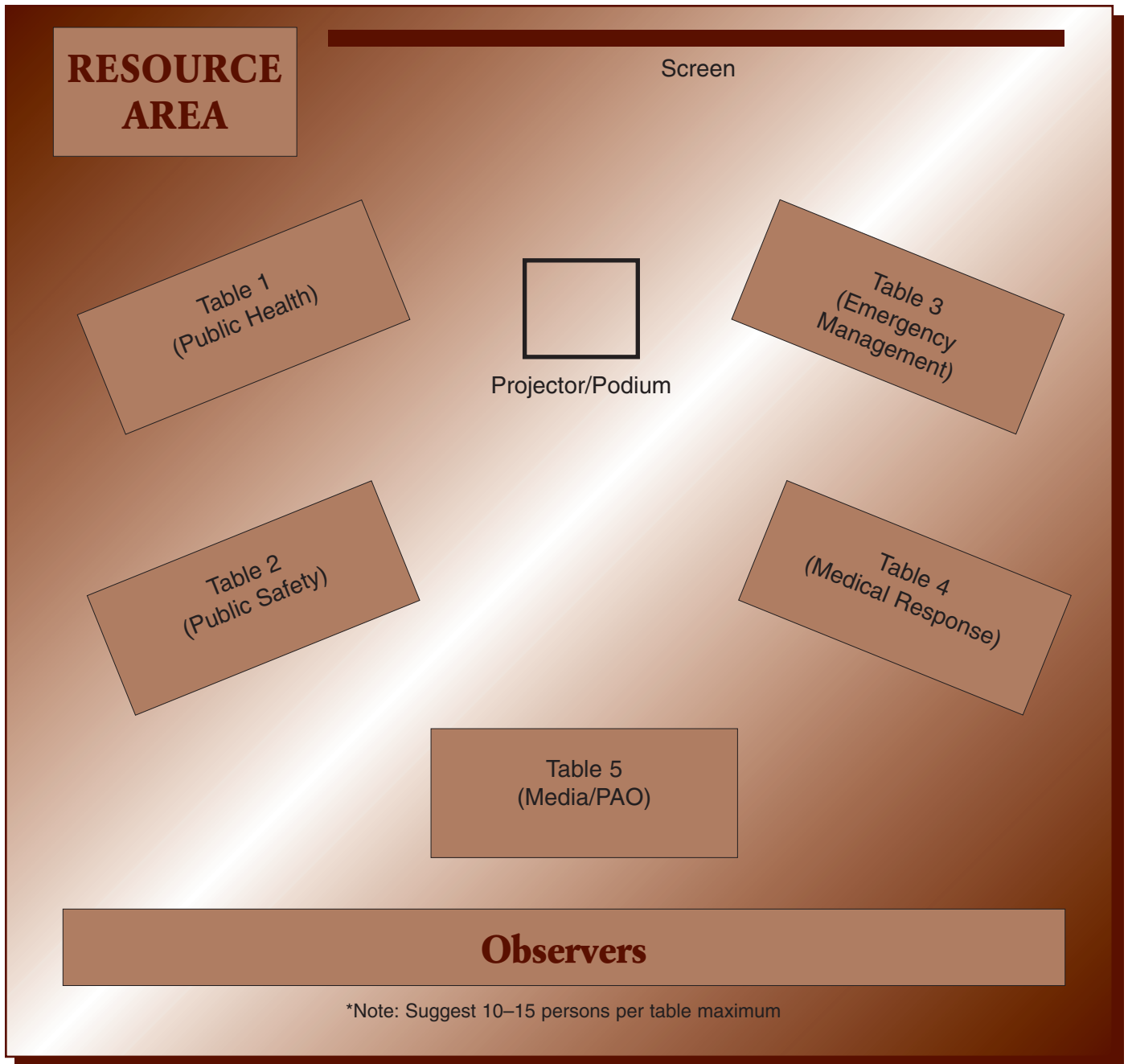


Figure 3-2. Sample Tabletop Exercise Angle Room Layout

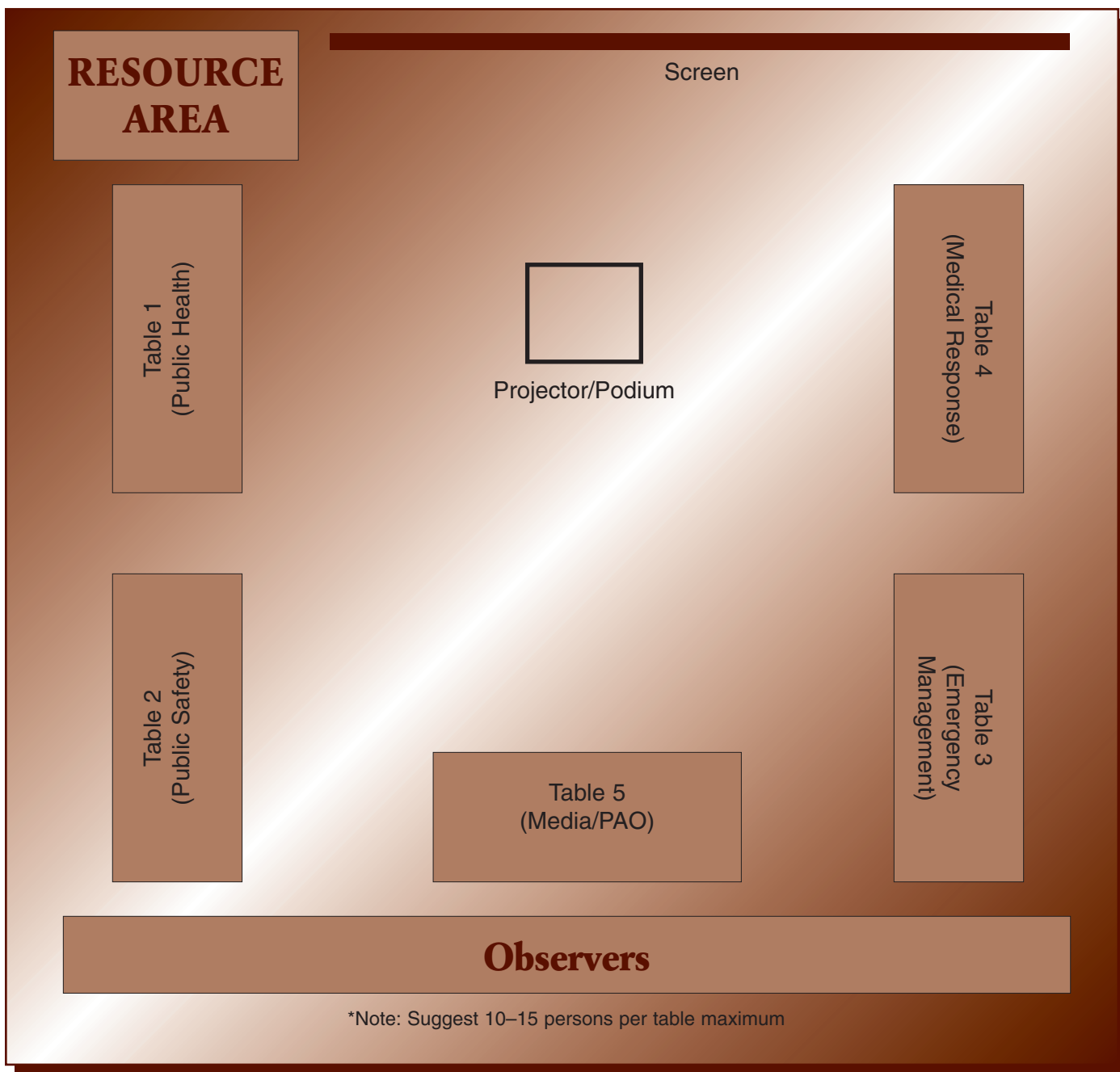


Figure 3-3. Sample Tabletop Exercise U-Shaped Room Layout

Equipment and Facilities

A distinct advantage to the tabletop exercise is its modest commitment in terms of time, cost, and resources. Equipment may consist of the following:

- ❑ General purpose items such as office supplies
- ❑ Appropriate reference materials (e.g., plans, SOPs, resource lists, incident command procedures, etc.)
- ❑ Facility with enough seating for player personnel and observers, as required
- ❑ Maps and charts set and ready to use
- ❑ Audiovisual equipment (optional)
- ❑ Refreshments for all participants
- ❑ Other items deemed necessary for exercise play

The layout of the room should enhance participation interaction. Two examples of exercise room setup are provided in figures 3-2 and 3-3.

Phases

Pre-Exercise

All 16 of the design steps as outlined in Chapter 2 are applied in the Pre-Exercise Phase. In the TTX, Steps 12 (expected actions) and 13 (messages) are simpler because there is no actual action initiated or taken. Instead, the identification of actions that the participants would take serves as the basis for the discussion among the participants.

Step 1 – Assess Needs

The needs assessment is similar in all exercises. Designers always need to look at existing plans, hazards, political needs, coordination, training gaps, etc.

Step 2 – Conduct Initial Planning Conference

The initial planning conference should include participating agencies and organizations. Its purpose is to reach an agreement on the overall exercise concept, the exercise objectives, the exact date and location of the exercise, and the level of commitment to the exercise from each participating agency. Participating agencies should be instructed to come to the conference with the appropriate authority and preparation to discuss all of these issues. This conference is also a good time to provide the participants with a planning timeline.

Step 3 – Assess Capabilities, Roles & Responsibilities

An examination of the relevant EOPs/SOPs for mass prophylaxis may reveal whether organizations will be able to carry out their plans as prescribed. Past exercises and actual emergency after-action reports should be reviewed, as they typically identify shortcomings that will lend valuable insight into the capabilities, roles and responsibilities of those departments and agencies discussed. Determining the existence of specially trained units will assist in developing an exercise to test the capabilities of these unique or special resources. A thorough assessment of capabilities, roles and responsibilities can help identify shortcomings or gaps in response resources and the exercise can be developed to identify where specific resources can be obtained or procedures enhanced.

Step 4 – Define Scope

Every exercise requires limits on functions, agencies, hazards, exercise type, and geographical area. Because it is a simpler exercise, however, the TTX may require greater limits on functions or agencies, depending on the needs. The scope also serves to provide focus and keep the exercise on track.

Step 5 – Write Purpose Statement

All exercises require a purpose statement, based on the decisions made in limiting the scope. The following elements should be incorporated into the purpose statement:

- ☐ Functions
- ☐ Agencies and Personnel
- ☐ Participant Capabilities
- ☐ Hazard Type
- ☐ Geographical Area

Step 6 – Develop Planning Timeline

The timeline provides a sequential list of major events in planning the exercise and developing supporting documents, and is used by the Exercise Director to schedule and track exercise milestones.

Step 7 – Send Exercise Directive

An Exercise Directive is a letter or memo sent to each organization whose participation is requested in the exercise. It states the purpose of the exercise and its importance to the invitees, and asks for their participation.

Step 8 – Organize Design Team

The design team is comprised of representatives from the various organizations and entities that would be involved in the response to a public health emergency in the geographical area in which you plan to conduct your exercise. Representatives from various state, region, and local jurisdictions should be part of the Design Team. The Design Team is involved in the planning, execution, and evaluation of the exercise.

Step 9 – Write Objectives

All exercises need clear objectives that are based on the purpose statement. A simple TTX does not need as many objectives as a larger exercise. For a TTX, a maximum of three or four objectives should be sufficient. See page 13 for additional information about objectives.

Step 10 – Compose Narrative

The narrative for the TTX is essentially the same as that for a field training exercise. Since the narrative forms the basis for the entire exercise, sufficient detail of the initial event should be included in the narrative. See page 15 for additional information about narratives.

Step 11 – Develop Major and Detailed Events

A tabletop exercise does not need as many discrete events as a functional exercise because it is more of a discussion than a simulation. The events can be turned into problem statements or messages for discussion. Though there are fewer events, the same careful thought must go into choosing them. See page 17 for additional information about major and detailed events.

Step 12 – Determine Expected Actions

Expected actions form the basis for evaluation; that is, for determining whether participants responded as written in the plan. Again, because event lists are shorter and objectives are fewer in tabletop exercises, the expected actions will be fewer. See page 18 for additional information about expected actions.

Step 13 – Prepare Messages

In a tabletop exercise, messages are handled differently than in a Full-Scale Exercise. A FSX exercise is fully simulated so there will be a complete set of messages to drive the action. A tabletop exercise, on the other hand, stops for problem solving and long discussions. Some tabletop exercises use problem statements rather than detailed messages. In the problem-solving format, players collectively discuss a list of problems that may appear at the end of the narrative or that are verbally presented one at a time by the controller/facilitator. Many TTXs require only three to five messages or problem statements, though it is wise to be ready with ten for a small tabletop. In the detailed message format, a tabletop exercise

proceeds much like a functional exercise, in that individual messages are presented to the group(s) for their discussion, and they later present their solution(s). See page 18 for additional information about messages/injects.

Step 14 – Write Controller Handbooks

The Controller Handbook provides controllers with the necessary information to conduct the exercise. The handbook contains background information, a basic description of the exercise, and a Master Scenario Event List (MSEL). The final Controller Handbook is compiled just before the execution of the exercise.

Step 15 – Develop Exercise Plan

The Exercise Plan provides planners and controllers with the information required to conduct the exercise. It contains information on the exercise concept, objectives, assumptions, artificialities, rules, and responsibilities. The Exercise Plan also addresses safety, security, and logistical issues.

Step 16 – Finalize

The finalize step provides the opportunity to review all preparations and arrangements for a particular exercise. A review of all documents, safety and security issues, logistics, control structure, and player and controller training dates should occur, and any unresolved issues or necessary changes should be dealt with at this step.

Execution

A typical TTX sequence of events is as follows:

- ❑ Participants are typically briefed or provided information on the nature of the simulated biological event before their arrival to the exercise location.
- ❑ The facilitator provides a briefing to the players outlining the purpose of the exercise, exercise objectives, ground rules, administrative matters, and evaluation methods.
- ❑ Just prior to the start of the exercise, the facilitator gives the players a scenario update briefing as required. This briefing includes a review of, and any changes to, the scenario not already announced or any items requiring reiteration. Maps and relevant data are also provided to make the exercise as realistic as possible. This briefing sets the stage for the introduction of the messages or problem statements.
- ❑ The facilitator hands out a series of messages to the players, each describing a problem to which someone must respond.
- ❑ The facilitator allows time for players to develop responses to the problem presented.
- ❑ The players, guided by the facilitator, discuss their responses to the problem being presented.
- ❑ If a particularly perplexing problem arises, the entire group generally discusses it.

- ❑ The facilitator guides the discussion of other possible responses and their impact on the other players.
- ❑ This sequence continues through the various messages to completion.

TTXs generally last a couple of hours. Even if the scenario has not run through to its conclusion, the primary goal will have been achieved, and that is getting representatives from multiple agencies to talk and work together face-to-face. The more frequently the various agency representatives can work together prior to an actual event, the more willing they will be to work together and share information during an actual public health emergency.

A successful TTX is one that considers questions such as coordination, assignment of responsibilities, pre-event planning, etc. Additionally, it should achieve its objective(s) of allowing people to engage in productive conversation and getting to know one another, raising new issues, and ensuring that new lessons are learned.

Post-Exercise

At the end of the exercise, the facilitator conducts an immediate review of the exercise so that all players gain maximum training benefit from the exercise. At a minimum, the After-Action Review should provide an opportunity for players and the facilitator to exchange information, ideas, and lessons learned. See Chapter 4, Exercise Evaluation, for a complete discussion of the After-Action Review and after-action report.

COMMAND POST EXERCISE (CPX) OR FUNCTIONAL EXERCISE (FX)

Description

A Command Post Exercise (CPX) or SNS Functional Exercise (FX) simulates a manmade or natural disaster in the most realistic manner possible, short of moving real people and equipment to a real site. It expands the TTX with more realism. It achieves this realism by means of a carefully designed and scripted scenario, in which mass prophylaxis dispensing is simulated. For example, instead of actually opening a dispensing site, this action is simulated.

The CPX/FX is designed to test or evaluate individual capabilities, roles and responsibilities, multiple functions, or activities within a function or interdependent group of functions. Exercise activities are usually under a time constraint and an evaluation or critique is normally held at the end of the exercise. Unlike the conference room setting of the typical tabletop exercise, the CPX/FX is conducted in an operations center, field environment, or a combination of the two with real or simulated outside resources. A CPX/FX might be designed to test and evaluate one or more elements of state, regional, or local support in a stressful environment. It will typically take at least six months to plan a CPX/FX.

Characteristics

Methodology

- ☐ Simulators submit messages/injects into play
- ☐ Controllers monitor plan
- ☐ Observers record players' actions
- ☐ Evaluators determine effectiveness using exercise objectives as criteria
- ☐ Telephones, radios, televisions, and computers are utilized to enhance realism

Simulated Activities

- ☐ Public health emergency is simulated
- ☐ Simulators and controllers represent all field units
- ☐ No actual movement of resources (resource movement simulated)

Advantages

- ☐ Increased realism over tabletop
- ☐ Ability to test integrated response of entire public health emergency management system
- ☐ Modest commitment in terms of time, cost, and resources

Disadvantages

- ☐ Scenario development can be difficult
- ☐ Acquiring telephones, radios, computers, etc., to enhance realism can be difficult

Personnel

Command Post Exercises/Functional Exercises require more personnel than tabletop exercises and are much more realistic. Typically, all participants are not located in the same room. To ensure that a CPX/FX is conducted in a realistic manner, some participants must act as controller(s), simulator(s), or evaluator(s). Much of the success of the exercise depends on how well these key participants know their roles.

Players. Player personnel for a functional exercise should include representatives from agencies/organizations who would actually be called upon in the event of a manmade or natural disaster such as medical, public health, fire, police, public works, Red Cross, mayor's office, etc. (See figure 3-1, sample Listing of Potential Exercise Participants). Each player should receive a copy of the Player's Handbook.

Controller. The controller's role is to supervise the overall conduct of the exercise and to make certain that the exercise is conducted according to the objectives and proceeds according to plan. The controller is provided a Controller Handbook with the information and documentation necessary to fully understand the details of the entire exercise. The controller monitors the sequence of events as they unfold and supervises the input of messages. In doing this, the controller is guided by a Master Sequence of Events List (MSEL). The MSEL is a sequential listing of major and minor events, the time they will occur, and the messages by which the events will be revealed to the players. The controllers also serve to maintain order and professionalism in the control and simulation areas (rooms). Other controller responsibilities are as follows:

- ❑ Control spontaneous inputs (injects) by simulators
- ❑ Respond to unplanned actions
- ❑ Record responses of players and maintain appropriate logs and forms

Simulators. In order to create a real-life environment, simulators can be mock explosive or dispersion devices, liquids or powders, or people engaged in role-playing. Human simulators ("actors") act as, and on behalf of, "outside" people or agencies that would normally interact with the exercise players, and they can range from government to ordinary citizens. They do this by transmitting pre-scripted or spontaneous messages to players. Because they may be required to improvise, it is important that simulators be knowledgeable of the agency they are simulating as well as the sequence of events and messages. For this reason, it is a good idea to select simulators from the actual organization they will portray. For example, a LPHA has progressed from TTX to the CPX/FX stage of their overall exercise plan. In developing their CPX/FX, it would be prudent to attempt to get members of the Local Emergency Operations Center (LEOC) to play their actual roles in the control cell of the exercise. Simulator responsibilities are as follows:

- ❑ Send prescribed messages/injects at the scheduled time
- ❑ Respond to unanticipated actions by players with spontaneous messages
- ❑ Maintain contact with controllers about the progress of the exercise
- ❑ Simulate all actions of an agency

Evaluators. In order to maintain an effective exercise program, the exercises must be objectively evaluated. Every exercise needs to have an evaluation plan. During the exercise planning phase, evaluators should be provided with copies of the relevant SOPs/EOPs and with the expected actions to the messages and injects. The evaluator must be able to objectively determine whether appropriate actions were taken by the participants, and what areas might need improvement. Equally important, evaluators should be able to evaluate the design and execution of the exercise as well.

Equipment and Facilities

Command Post Exercises/Functional Exercises require a moderate amount of equipment. This may consist of the following:

- ❑ Facility/facilities large enough to accommodate player and simulator personnel
- ❑ General purpose items such as office supplies, message/journal logs, appropriate reference materials, etc.
- ❑ Adequate parking for all of the participants
- ❑ Phones, computers, or other communication devices (if exercise budget allows)
- ❑ Audiovisual equipment
- ❑ Equipment necessary to identify participants (badges/identification cards)
- ❑ Food service (optional depending on length of exercise)

Various room arrangements are possible depending on the size of the exercise. A small exercise might be arranged in one room as shown in figures 3-2 and 3-3. In any setup there should be space for the players, usually a table with plenty of workspace. Other areas will be set aside for the simulators. It is not recommended to use one room unless absolutely necessary, as it is important for the controller/simulator functions to be separate from players.

For an elaborate CPX/FX, the players are generally divided into functional groups of policy, coordination, and operations. The groups may be in the same or separate rooms. When telephones or other communication devices are being utilized, players should not be allowed to conduct face-to-face coordination.

Phases

Pre-Exercise

The 16 design steps discussed in Chapter 2 are utilized in the development of a CPX/FX exercise. Because the functional exercise is a simulation, Steps 12 (expected actions) and 13 (messages) require more attention to detail than in the tabletop exercise.

Step 1 – Assess Needs

The needs assessment is similar in all exercises. Designers always need to examine existing plans, hazards, political needs, coordination, training gaps, etc. See page 5 for additional information about assessing needs.

Step 2 – Conduct Initial Planning Conference

The initial planning conference should include all participating agencies and organizations. Its purpose is to reach an agreement on the overall exercise concept, the exercise objectives, the exact date and location of the exercise, and the level of commitment to the exercise from each participating agency. Participating agencies should be instructed to come to the conference with the appropriate authority and preparation to discuss all of these issues. This conference is also a good time to provide the participants with a planning timeline.

Step 3 – Assess Capabilities

It is imperative that the capabilities, roles and responsibilities of the participating agencies and organizations be reviewed prior to the exercise. An examination of the relevant SOPs can reveal whether organizations will be able to carry out their plans as prescribed. Past exercises and actual emergency after-action reports should be reviewed, as they typically identify shortcomings that will lend valuable insight into the capabilities of those departments and agencies discussed. Determining the existence of specially trained units will assist in developing an exercise to test the capabilities of these unique or special resources. A thorough assessment of capabilities can help identify shortcomings or gaps in response resources and the exercise can be developed to identify where specific resources can be obtained or how procedures can be enhanced.

Step 4 – Define Scope

Defining the scope essentially means drawing some meaningful limits to the areas addressed in the needs assessment. It is important that these areas be clear and narrowly defined. See page 9 for additional information about defining the scope.

Step 5 – Write Purpose Statement

The purpose statement takes five components identified when limiting the scope (i.e., functions, personnel and resources, disaster type, location, and exercise type) and incorporates them into a concise statement. See page 12 for additional information about the purpose statement.

Step 6 – Develop Planning Timeline

The timeline provides a sequential list of major milestones in the planning and development of exercise documents and is used by the Exercise Director to schedule and track exercise milestones.

Step 7 – Send Exercise Directive

An important means of getting support for an exercise during the planning phase is the Exercise Directive. An Exercise Directive is a letter or memo sent to each organization whose participation is requested in the exercise. It states the purpose of the exercise and its importance to the invitees, and asks for their participation.

Step 8 – Organize Design Team

The Design Team is comprised of representatives from the various organizations and entities that would be involved in a mass prophylaxis response to a public health emergency in the geographical area in which you plan to conduct your exercise. Representatives from various state, region, and local jurisdictions should be part of the Design Team. The Design Team is involved in the planning, execution, and evaluation of the exercise.

Step 9 – Write Objectives

Objectives are what you want to specifically accomplish in the exercise, and are based on the purpose statement. Breaking down a purpose statement into its logical components will help identify the objectives. Because objectives are so critical, it is important to phrase them carefully. The main thing is to remember that they must be clear, concise, specific, and performance based.

Step 10 – Compose Narrative

The narrative sets the stage for the exercise. It is a brief description of the events that have led up to the moment the exercise begins.

Step 11 – Develop Major and Detailed Events

Major and detailed events provide a list of problems or situations that drive player actions. A large disaster will result in many major and detailed events, while a small one will only require a few. The events lists are longer and there will be more objectives in a functional exercise than in a tabletop exercise. As mentioned in Chapter 2, breaking down major events creates detailed events. This breakdown makes it easier to determine expected actions and write corresponding messages to prompt those actions. Often new exercise designers confuse events with expected actions. Events are problems that occur as a result of the disaster, not the response of an agency or individual to that problem.

Step 12 – Determine Expected Actions

Each detailed event should be designed to prompt one or more expected actions from one or more agencies participating in the exercise. Expected actions form the basis for evaluation; that is, for

determining whether participants responded as written in the plan. There will be more expected actions in the functional exercise than in a tabletop exercise.

Step 13 – Prepare Messages/Injects

Messages are the means by which expected actions are brought about. They are communicated to the players by telephone or radio, delivered by hand, whispered, or transmitted by fax. Injects are “optional” messages that may be used to complicate play. In a functional exercise, messages are handled differently than in a tabletop exercise. A CPX/FX is fully simulated so there will be a complete set of messages to drive the action. (This is different than the tabletop exercise, which stops for problem solving and long discussions.)

When writing messages, be sure to ask yourself the following questions:

- ☐ What messages will motivate the recipient to accomplish the expected actions?
- ☐ To whom would you send the message?
- ☐ What would they say?

Step 14 – Write Controller Handbooks

The Controller Handbook provides the controllers with the necessary information to conduct the exercise. The handbook contains background information, a basic description of the exercise, and a Master Scenario Event List (MSEL). The final Controller Handbook is compiled just before the execution of the exercise.

Step 15 – Develop Exercise Plan

The Exercise Plan provides planners and controllers with the information required to conduct the exercise. It contains information on the exercise concept, objectives, assumptions, artificialities, rules, and responsibilities. The Exercise Plan also addresses safety, security, and logistical issues.

Step 16 – Finalize

The finalize step provides the opportunity to review all preparations and arrangements for a particular exercise. A review of all documents, safety and security issues, logistics, control structure, and player and controller training dates should occur, and any unresolved issues or necessary changes should be dealt with at this step.

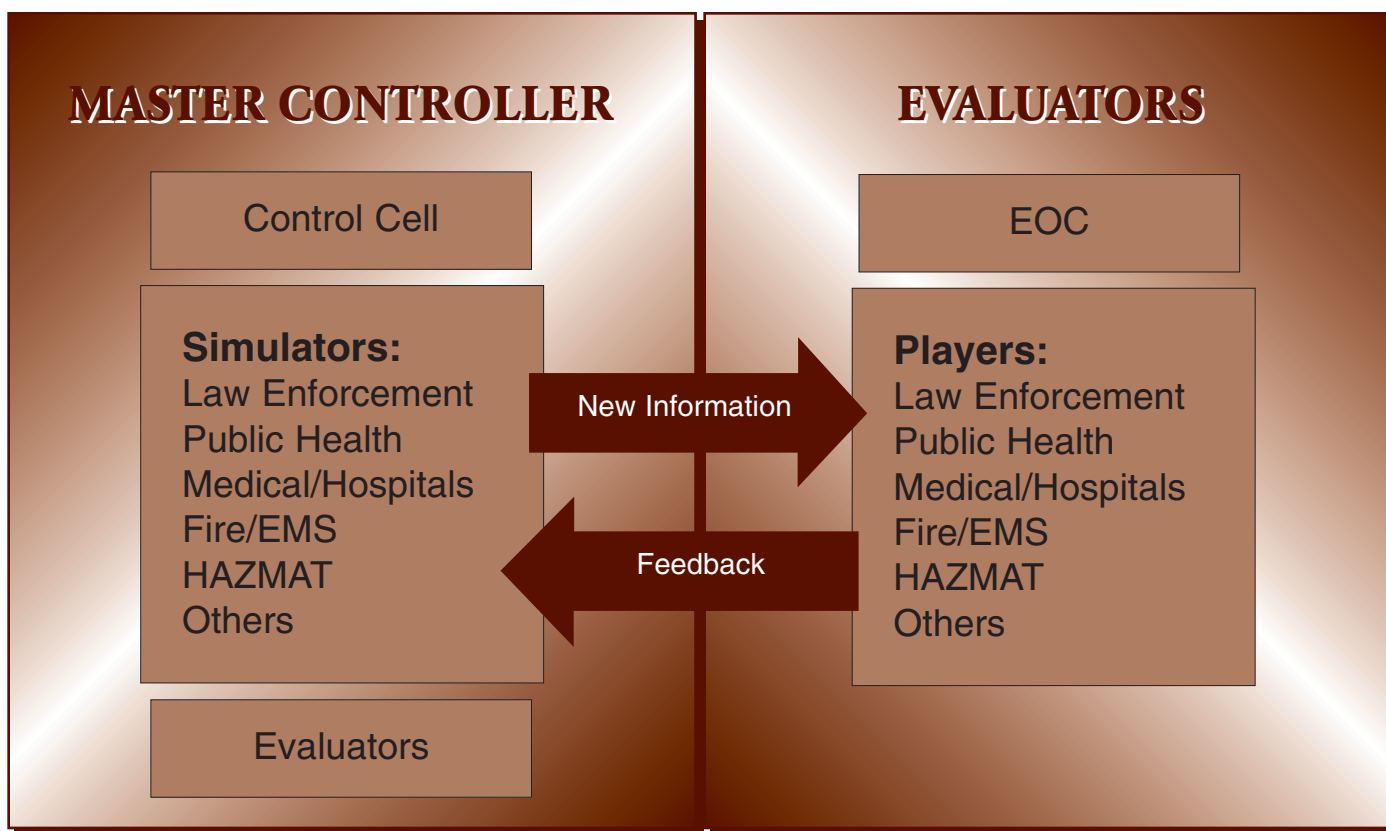


Figure 3-4. Exercise Information Flow

Execution

A typical CPX/FX sequence of events is as follows:

- ❑ The controller reviews the scenario with the players, updating as required
- ❑ The narrative is presented to players; is often read aloud, but for greater realism it can be simulated on TV or radio
- ❑ Simulators start to relay messages to the players
- ❑ Players then take actions as they would in the event of a real emergency, providing information, reports, and requests to simulated "higher," "lower," and "adjacent" organizations
- ❑ Simulators, in their roles as "higher," "lower," and "adjacent" organizations, respond to player actions as appropriate

Post-Exercise

At the end of the exercise, the senior controller holds an immediate review and critique so that all players and evaluators gain maximum training benefit from the exercise. At a minimum, the review and critique should provide an opportunity for players and evaluators to exchange information, ideas, and lessons learned. See Chapter 4, Exercise Evaluation, for a complete discussion of the AAR. The diagram in figure 3-4 depicts the exercise information flow.

FIELD TRAINING EXERCISE (FTX) OR SNS FULL-SCALE EXERCISE (FSX)

Description

The field training exercise (FTX) or SNS Full-Scale Exercise (FSX) is as close to a real incident as possible and involves the actual mobilization of personnel, equipment, and resources to the field. It differs from a TTX in three important ways:

- ❑ The actions of several agencies are coordinated
- ❑ Nearly all emergency functions are tested
- ❑ The EOC is activated and field command posts may be established

The FTX/FSX is used to evaluate the operational capabilities, roles and responsibilities of the emergency management systems, interactively, over an extended period of time. The exercise involves testing a major portion of approved SOP/EOP elements and organizations in a realistic, highly stressful environment. Actual mobilization and movement of personnel and resources are required to demonstrate coordination, response, and recovery capability.

Normally, the EOC is activated and field command posts may be established. The FTX/FSX is the largest and most complex of the three exercises and may involve participation at the federal, regional, state, and local levels. Obviously, it places extra demands on exercise planners as its requirements and challenges are quite different than those associated with the tabletop and functional command post exercises. Typically it takes approximately one year to properly plan a FTX/FSX.

Field training exercise requirements are as follows:

- ❑ Prior experience with other types of exercises
- ❑ Support and commitment from officials and emergency service organizations
- ❑ Appropriate physical facilities and equipment
- ❑ Adequate communications
- ❑ Adequate funding, labor, time commitment, and personnel

The following are some of the main challenges that face planners of a FTX/FSX:

- ❑ **RSS/ADS/Dispensing Site Selection.** Site selection is one of the key decisions that should be done as early as possible. The site has to be realistic but cannot shut down a major highway or cause a safety hazard. Planners must consider such factors as safety, space, and cost.

- ❑ **Scene Management.** Scene management refers to the logistics of setting up dispensing sites and maintaining control. Where will players be set up? Is there a staging area nearby? Planners must also consider traffic patterns, as well as proximity to schools, hospitals, fire, law enforcement, and other participating agencies, as they relate to the selected site. Scene management also refers to creating a believable incident scene and managing the props and materials you utilize. How will you simulate biological agents and materials?
- ❑ **Personnel and Resources.** Costs are incurred at every stage of exercise development, both evident and hidden. Planners will need to plan for things requiring equipment and materials, contract services, and even miscellaneous items such as coffee and meals. Planners must be specific about what is needed with respect to personnel and equipment. To do so, questions such as the following need to be asked:

Personnel

- ❑ What type of individuals and state and local agencies will need to participate?
- ❑ Will individual agencies expect reimbursement for overtime if the exercise takes place on a weekend?
- ❑ Will victims or role players be required?
- ❑ Will adjacent LPHAs participate as staff or role-players?

Equipment

- ❑ What kinds of equipment will be needed to carry out the scenario?
- ❑ Is all required equipment readily available?
- ❑ What are the associated costs?
- ❑ What kinds of props are necessary?
- ❑ How will scope of the exercise deplete the actual response capability of the participating organizations? (Response to real emergencies cannot be compromised.)
- ❑ Unlike other exercises, safety is a real issue with field training exercises; consequently, do the participating organizations' SOPs/EOPs, address safety procedures? If not, planners must ask themselves the following questions:
 - What hazards might be present?
 - What kind of safety plan can be developed?
 - If a real emergency occurs in the course of the exercise, how can the exercise be salvaged?
 - What are the procedures in case a real emergency occurs during the exercise?

Characteristics

Methodology

- ☐ Simulators submit messages/injects into play and enact scenarios
- ☐ Controllers monitor play; observers record player actions
- ☐ Evaluators determine effectiveness using exercise objectives as criteria

Simulated Activities (CBRNE)

- ☐ WMD or Toxic Industrial Chemical
- ☐ WMD Biological or Highly contagious disease
- ☐ WMD or accidental Radioactive/Nuclear
- ☐ WMD Explosive/Incendiary
- ☐ Natural public health emergency
- ☐ Combination of two or more of the above

Advantages

- ☐ Less simulation, increased realism and greater stress
- ☐ Greater opportunity to evaluate integrated communication capability
- ☐ Ability to evaluate mobilization of resources and first responder capability
- ☐ Ability to evaluate interagency cooperation, information sharing, and communication among multi-jurisdictional entities

Disadvantages

- ☐ Additional high costs
- ☐ Requires increased time commitment and level of expertise to properly implement
- ☐ Additional emphasis placed on safety as a result of movement of first responder equipment and personnel

Personnel

All levels of personnel (policy, coordination, operations, and field) should participate in FTX/FSXs. Additionally, it is important that all participants have at least a moderate level of experience in order for this type of exercise to be successful.

Players/Responders. Player personnel for a FTX/FXS should include representatives from agencies/organizations who would actually be called upon in the event of a mass prophylaxis public health emergency such as medical and health, fire, police, specially trained and equipped units, public works, Red Cross, mayor's office, etc. See figure 3-1, Sample Listing of Potential Exercise Participants.

Controller. In addition to the controller responsibilities previously discussed, in a FTX/FSX, responsibility for starting and controlling the exercise should be decided early in the planning process and designated to one person. The exercise controller should designate an exercise control point from which all communications should be monitored. All simulators and evaluators should either work from this location or be in constant contact with it.

Simulators/Evaluators. In addition to their duties and responsibilities discussed earlier, simulators and evaluators should ensure they keep a log of all significant events. This is important because so many of the actions will not be pre-scripted. Instead, they will be spontaneous responses to other actions.

Equipment and Facilities

The equipment required for a FTX/FSX typically consists of the following:

- ❑ General purpose items such as office supplies, message/journal logs, report forms, organization SOPs, and appropriate reference material
- ❑ Equipment that player organizations need to operate in the field environment
- ❑ Room for EOC, room for equipment, a staging area, and a dispensing area
- ❑ Computers, radios, cellular and other telephones
- ❑ Room for SNS materiel

The exercise area should be large enough to allow for realistic dispersion/deployment of all player organizations as per their SOP/EOP. The control headquarters should be located where it will support the exercise. Facilities in support of the control headquarters include the following:

- ❑ Security
- ❑ Visitor reception and briefing
- ❑ Food service
- ❑ Medical service

PHASES

A FTX/FSX requires extensive time, effort, and resources. The exercise Design Team may need from a year to a year and a half to develop a complete exercise package, including preparatory TTXs and CPX/FXs since FTX/FSXs are an evolutionary process. Development of a FTX/FSX can be quite difficult and therefore often requires the expertise of several response agencies. Many of the difficulties arise from enormous logistical problems, but other concerns do exist. As with other exercises, the 16 step design process is utilized. Differences arise because TTXs and CPX/FXs rely on words to obtain realism, while FTX/FSXs are conducted in such a manner that the participants are engaged as though they are responding to a real event.

Pre-Exercise

Step 1 – Assess Needs

The needs assessment is the same as in the other exercises, but needs to be more thorough due to the complexity and logistical requirements of the FTX/FSX.

Step 2 – Conduct Initial Planning Conference

The initial planning conference should include all participating agencies and organizations. The purpose of the conference is to reach an agreement on the overall exercise concept, the exercise objectives, the exact date and location of the exercise, and the level of commitment to the exercise from each participating agency. Participating agencies should be instructed to come to the conference with the appropriate authority and preparation to discuss all of these issues. This conference is also a good time to provide the participants with a planning timeline.

Step 3 – Assess Capabilities, Roles & Responsibilities

An examination of the relevant SOPs/EOPs can reveal whether organizations will be able to carry out their plans as prescribed. Past exercises and actual emergency AARs should be reviewed, as they typically identify shortcomings that will lend valuable insight into the capabilities of those departments and agencies discussed. Determining the existence of specially trained units will assist in developing an exercise to test the capabilities of these unique or special resources. A thorough assessment of capabilities can help identify shortcomings or gaps in response resources, and the exercise can be developed to identify where specific resources can be obtained or procedures can be enhanced.

Step 4 – Define Scope

The scope is the same as in other exercises but needs to be more thorough due to the complexity and logistical requirements of the FTX/FSX.

Step 5 – Write Purpose Statement

The purpose statement is the same as in other exercises but needs to be more thorough due to the complexity and logistical requirements of the FTX/FSX. See page 12 for additional information about developing the purpose statement.

Step 6 – Develop Planning Timeline

The timeline provides a sequential list of major events in the planning and in the development of exercise documents and is used by the Exercise Director to schedule and track exercise milestones.

Step 7 – Send Exercise Directive

The Exercise Directive is an important means of getting support for an exercise during the planning phase of the exercise. An Exercise Directive is a letter or memo sent to each organization whose participation is requested in the exercise. It states the purpose of the exercise, its importance to the invitees, and asks for their participation.

Step 8 – Organize Design Team

The Design Team is comprised of representatives from the various organizations and entities that would normally be involved in the response to a public health emergency in the geographical area selected for the exercise. Representatives from the various jurisdictions (state, region, and local) should be part of the Design Team. The Design Team is involved in the planning, execution, and evaluation of the exercise.

Step 9 – Write Objectives

The objectives in a FTX/FSX need to be more thorough due to the complexity and logistical requirements of the FTX/FSX. See page 13 for additional information about writing objectives.

Step 10 – Compose Narrative

The narrative is handled differently in a FTX/FSX since a lengthy verbal description is not needed to set the scene. The narrative is usually shorter and will describe how and when the exercise will begin.

Step 11 – Develop Major and Detailed Events

Major and detailed events still exist in a FTX/FSX, but many exist as actual occurrences rather than verbal descriptions. A public health emergency scenario may have to rely on words to simulate some events, but bricks and debris strewn around a building, dummies resting under debris, victims displaying various symptoms, and other props can simulate many of them. Even though many of these events are presented visually, they cannot be placed in a random and haphazard manner. Careful planning and consideration should be given to ensure the events relate to the exercise actions.

Step 12 – Determine Expected Actions

Determining expected actions is the same as in other exercises, but the expected actions need to be more thorough due to the complexity and logistical requirements of the FTX/FSX.

Step 13 – Prepare Messages/Injects

Most of the action in a FTX/FSX grows out of the initial message and scene setup, described as “free play.” Still, some pre-scripted messages are often required to “move” the action along. Ensure that the “scene” is set up to provide the necessary stimuli to trigger the expected response. For example, in a manmade or natural disaster scenario, if the victims are not knowledgeable about biological agents, they may have to be pre-coached or tagged with the symptoms and vital signs. This will help ensure that proper “scene” is being presented to the players. Injects can still be used as “wild cards” in exercise play.

Step 14 – Write Controller Handbooks

The Controller Handbook provides the controllers with the necessary information to conduct the exercise. The handbook contains background information, a basic description of the exercise, and a Master Scenario Event List (MSEL). The final Controller Handbook is compiled just before the execution of the exercise.

Step 15 – Develop Exercise Plan

The Exercise Plan provides planners and controllers with the information required to conduct the exercise. It contains information on the exercise concept, objectives, assumptions, artificialities, rules, and responsibilities. The Exercise Plan also addresses safety, security, and logistical issues.

Step 16 – Finalize

The finalize step provides the opportunity to review all preparations and arrangements for a particular exercise. A review of all documents, safety and security issues, logistics, control structure, and player and controller training dates should occur, and any unresolved issues or necessary changes should be dealt with at this step.

Execution

A typical SNS FSX exercise sequence of events is as follows:

- ❑ Description of “incident” communicated to the players in the same manner that it would occur in a real disaster
- ❑ MDHSS-Department Situation Room (DSR) Activated
- ❑ EOC activated (State and Local Level)
- ❑ Player personnel conducting the field component proceed to the assigned location, where they see a “visual” narrative in the form of a mock incident

Post-Exercise

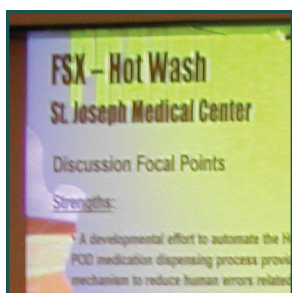
At the end of the exercise, the senior controller holds an immediate review often referred to as a “Hot Wash.” This first-impression briefing is usually conducted at the exercise site the afternoon of or the day after the end of the exercise. The Executive Director determines the structure of the Hot Wash briefing and the number of the organizations that will speak. It is common for the working group leaders and the chief players from the major participating organizations to provide a briefing. A successful strategy for the Hot Wash is to have the team leader identify three things that went well and three things that could be improved as a result of the exercise. These six items can be put in a bullet format and incorporated into a slide presentation for the Hot Wash. Each speaker should be allowed a limited time (about five minutes) to discuss these issues. Notes of the Hot Wash should be taken to preserve the comments for the final AAR. At a minimum, the review and critique should provide an opportunity for players and the controllers to exchange information, ideas, and lessons learned. It is not the intent of the review and critique to find fault or blame, but to provide the information necessary to benefit from the exercise.

After-Action Review and Report

The purpose of the after-action report (AAR) is to document the observations and lessons learned from the exercise. The report is compiled from several sources, including comments made during the exercise Hot Wash, observations collected during the daily controller meetings, and observations and comments submitted by players and controllers after the exercise is completed. An After-Action Review may also be conducted, which allows participants to review observations and lessons learned in order to resolve any significant conflicts.

The after-action report is developed using coordinating drafts and final versions. The coordinating draft should be prepared within 60 days of the exercise and should provide a basic format, lessons learned, and observations that define the exercise.

After comments are received from the field, they should be compiled, reviewed, and incorporated into the AAR, as appropriate. The final copy should be reviewed by the MDHSS and/or LPHA before final publication and distribution. If any item is disputed, a message should be sent to the field requesting clarification and resolution of the issue. Once issues have been resolved, the final report should be published and distributed.



IV. *Exercise Evaluation*

INTRODUCTION

For a mass prophylaxis response to be effective, it is imperative that the personnel, plans, procedures, facilities, and equipment be exercised and tested on a regular basis. However, no amount of exercising will be constructive unless each exercise is followed by a structured evaluation that allows the participating organizations to identify successes and any corrective actions that need to be taken to ensure an improved real-world response capability. A systematic exercise evaluation process is a means by which leaders/decision-makers can accomplish the following:

- ☐ Validate the effectiveness of their mass prophylaxis planning
- ☐ Determine whether changes are being appropriately implemented
- ☐ Evaluate the capability to respond to an event, regardless of the cause
- ☐ Identify those corrective actions that need to be taken (such as planning, training, equipment, facilities, or personnel) for short-term and long-term planning
- ☐ Provide data that can be used to improve exercise design and evaluation techniques
- ☐ Evaluate their ability to determine the prophylactic needs of the population based on epidemiological data
- ☐ Evaluate their ability to respond to their special needs populations
- ☐ Evaluate their ability to protect Missouri's citizens and guests

Evaluation is the basis for a training assessment. Leaders may not see as much as the individual exercise players. Leaders can better correct deficiencies and sustain strengths by carefully evaluating individual and collective performances.

The exercise evaluation process usually consists of a Hot Wash, After-Action Review, and ultimately, the AAR. The AAR is the keystone of this evaluation process.

Feedback compares the actual output of a process with the intended outcome. By focusing on a task standard and by describing specific observations, leaders and subordinates identify strengths and weaknesses and together decide how to improve task proficiency and promote organizational cohesion. The After-Action Review is a valid and valuable technique regardless of the exercise type, organization type, or training tasks.

Exercise evaluation is simply defined as the act of reviewing or observing and recording exercise activity or conduct; applying the behavior or activity against exercise objectives; and noting strengths and weaknesses, deficiencies, or other observations. The most successful exercise is not one where all went well and no issues were identified. Rather, a successful exercise is one that forces an honest look at capabilities and leads to improvement in emergency response.

The evaluation tools used depend on the circumstances and complexity of the exercise. Regardless, to ensure a thorough evaluation, a systematic approach to gathering information must be used.

PLANNING FOR AN EVALUATION

Planning for evaluations begins at the same time exercise design does. An evaluation team leader is selected when the exercise Design Team is being organized. This person is a member of the Design Team and is responsible for all evaluation tasks.

During the planning process, the exercise Design Team leader selects personnel who will serve on the evaluation team. In a small TTX, there may be no evaluator. In a large FTX/FSX, there may be multiple individuals deployed at various sites such as the LPHA dispensing site, RSS/ADS, EOC, the incident site, and other exercise locations.

The evaluation team leader is responsible for developing evaluation methodology, which is a set of procedures and strategies for such things as the organization and deployment of the evaluation team. Evaluation team leaders are also responsible for creating the evaluation handbook, which consists of checklists and evaluation forms that team members can use when they are evaluating.

On the day of the exercise, evaluators observe the progress of the exercise and document the actions of the players to see if the exercise objectives are being met. The evaluators use checklists prepared prior to the exercise to ensure their comments are objective. Once the exercise is over, evaluators do the following:

- ❑ Review their notes to assess achievement of objectives
- ❑ During post-exercise meetings they listen and comment on player actions and performance (conclusions will be used later in reports and summaries that the evaluation team will prepare)
- ❑ Write formal exercise reports, if required

HOT WASH

At the end of the exercise, the senior controller often holds a Hot Wash, which is an immediate review of the exercise. This first-impression briefing is usually conducted at the exercise site immediately following or one day after the end of the exercise. The Executive Director determines the structure of the Hot Wash and the number of organizations that will speak. It is common for the working group leaders and the chief players from the major participating organizations to provide a briefing.

A successful Hot Wash strategy is to have each team leader identify three things that went well and three things that could be improved as result of the exercise. These six items can be put in a bullet format and provided to the proper personnel to incorporate into a slide presentation for the Hot Wash. Each speaker should be allowed five minutes to address these issues. Notes from the Hot Wash should be taken to preserve the comments for the final AAR. At a minimum, the review and critique should provide an opportunity for the players and controllers to exchange information, ideas, and lessons learned. It is not the intent of the review and critique to find fault or blame, but rather to provide the information necessary to benefit from the exercise.

Characteristics of the Hot Wash

- ❑ Conducted by the exercise facilitator/controller
- ❑ Includes observers, controllers, trainers, evaluators
- ❑ Conducted immediately following an exercise, on the spot

AFTER-ACTION REVIEW

Prior to writing the AAR, you may want to consider conducting an After-Action Review. After-Action Reviews are not critiques in the traditional sense. They are also not intended to make any one agency or person look good or bad, rather they are an open forum for discussing and comparing different opinions, strategies, and experiences. The purposes for conducting SNS exercises are to identify specific shortfalls in current SNS response plans, current levels of training, or the availability of current prophylactic assets. The After-Action Review details “what” happened, “why” it happened, and “how” to sustain strengths and improve on weaknesses.

The After-Action Review identifies the same issues as the Hot Wash, but allows sufficient time for all disciplines to think about and discuss what they observed/learned during the exercise. The development of a good After-Action Review is a six-step process. The steps are as follows:

- ❑ Step 1 – Develop Evaluation Plan
- ❑ Step 2 – Observe and Evaluate the Training
- ❑ Step 3 – Prepare for the After-Action Review
- ❑ Step 4 – Facilitate the After-Action Review
- ❑ Step 5 – Distribute Questionnaires
- ❑ Step 6 – Initiate Follow-Up Actions

Step 1 - Develop Evaluation Plan

After-Action Review planning begins once the tasks to be evaluated have been determined. Use maps, AARs from prior exercises, and in-house knowledge to select sites and determine the timeline for assembling the proper participants and exercise officials. Determine when the “review” will occur and who will attend. When selecting an After-Action Review site, use the appropriate training aids for site setup. When reviewing the After-Action Review plan, remember that every change takes preparation and planning time away from the subordinate observer/controller/evaluators (OCEs) or OCEs/supervisors. This may impact the quality of feedback. It is essential that OCEs and leaders are allowed as much time as possible to prepare for the review meeting. Ensure the plan includes the selection and, if required, train-up of observers and evaluators. Selection should not be left to chance or be based on individuals’ reputations within the unit/organization.

Step 2 – Observe and Evaluate the Exercise

The toughest but most important sub-task for the OCEs in preparation for the After-Action Review is observing and evaluating the SNS exercise. The OCEs must have done their homework with regard to the following factors:

- ❑ Focusing on actions required to accomplish the SNS exercise objectives
- ❑ Determining the critical tasks, steps, events, and keys for success
- ❑ Positioning for optimum viewing and hearing
- ❑ Monitoring radio nets
- ❑ Monitoring computer communications
- ❑ Taking written notes

When the unit/organization is conducting the SNS exercise, the OCEs must capture how well the unit accomplishes required tasks. Depending on exercise objectives, this may happen very quickly or over a period of hours. Make efficient use of OCEs as your “eyes” and “ears” during the exercise. The Senior OCE needs to plan to observe all critical events to have a successful After-Action Review. Some keys to success in observing the exercise are as follows:

- ❑ Keep written notes. OCEs need to develop a system that works for them (e.g., use standard 3x5 cards).
- ❑ Strive to be invisible, but take notes on what they see and hear.
- ❑ Communications over the radio nets is a great source of information. One OCE should continuously monitor player radio nets.
- ❑ Monitor computer communications among the players. This is easily achieved if the computer systems are networked by using software to track all communications, resources, and interactions among the players.

Step 3 – Prepare for the After-Action Review

Every OCE must be knowledgeable on the tasks, conditions, and standards conducted during the SNS exercise and must be very familiar with the scenario used as a framework for the exercise. At the end of the exercise, the OCEs meet and brief the senior controller conducting the After-Action Review.

The selected After-Action Review site should be set up as far in advance of the actual review meeting as possible. In the case of a formal After-Action Review, the site should be selected no later than the day before the training is scheduled to start. The senior controller should make a final check of the site and all training aids.

Step 4 – Facilitate the After-Action Review

Facilitation of an After-Action Review is a seven-step sequence.

1. Step 1 – Introduction and Rules
2. Step 2 – Review of Objectives and intent
3. Step 3 – Summary of Recent Events
4. Step 4 – Discussion of Key Issues
5. Step 5 – Discussion of Optional Issues
6. Step 6 – Discussion of Safety
7. Step 7 – Closing Comments

4A – Introduction and Rules

The After-Action Review facilitator covers the introduction and rules (listed in figure 4-1), which sets forth suggested rules and assumptions for a successful After-Action Review.

4B – Review of Objective and Intent

The unit/organization leader or senior exercise controller should state the mission, intent, and the concept of the operation. The facilitator should guide the discussion to ensure everyone understands the plan and the leader's intent. One technique is to have subordinate players restate the mission and discuss their leader's intent.

4C – Summary of Recent Events

After the leader explains what should have happened during the exercise, the After-Action Review facilitator reviews what actually happened. This discussion is based on the observations of the evaluators and any problems that affected the mission. For discussion purposes, it is better to ask what

After-Action Review Introduction and Rules

1. Determine what happened, why it happened, and how to improve or sustain.
2. An After-Action Review is not a critique; it is a learning event. The difference is that the After-Action Review centers on the unit or group working through the process. A critique focuses on the facilitator/evaluator providing the answers.
3. An After-Action Review does not grade success or failure. There are always weaknesses to improve upon and strengths to sustain.
4. The purpose of the After-Action Review is to bring out insights, observations, and questions to help identify and correct deficiencies or maintain strengths.
5. Do not take comments personally.
6. Everyone has an equal say. No one, regardless of rank or strength of personality, has all the answers.
7. Be prepared to participate. Everyone should have something to say.

Figure 4-1. After-Action Review Introduction and Rules

happened rather than to tell what happened. The facilitator must ensure specific issues are revealed, including both the positive and negative. The facilitator does not tell players or leaders what was good or bad about the exercise and must ensure the review does not gloss over mistakes or organizational weaknesses.

4D – Discussion of Key Issues

The senior controller leads the discussion of key issues. By using notes to guide the group through the events and getting participants to discuss their mistakes and corrective actions needed for the next iteration, the senior controller reviews each SNS exercise objective and determines how well each objective was achieved. All key observations must be supported by doctrinally based discussions, leaving no room for opinions by the facilitator or unit leaders.

Important guidelines in discussing key events are as follows:

- ❑ Ask leading questions that facilitate self-discovery and learning by all participants
- ❑ Avoid open-ended questions; be specific and do not generalize
- ❑ Do not dwell on issues unrelated to mission accomplishment
- ❑ Guide the direction of the review through questions and answers

The three discussion techniques used in an After-Action Review are as follows:

- ❑ **Chronological Order of Events.** This technique involves covering actions in the order they took place; this helps responders/players and leaders/supervisors to better recall what happened.

- ❑ **Key Events/Themes/Issues.** This technique focuses on critical exercise events, which directly support the exercise objectives that leaders/supervisors (chain of command) identified before the exercise began. Keeping a tight focus on these events prevents the discussion from becoming sidetracked by issues that do not relate to those objectives. This technique is particularly effective when time is limited.
- ❑ **Discipline Breakdown.** This technique focuses on each discipline. For example, the Public Health Department members discuss their actions, then hospital personnel discuss their actions, and then the incident commander discusses his or her actions. This technique is effective when the goal is to look carefully at all disciplines and how each was able to respond or was affected by action or inaction of other response personnel.

Flexibility is one of the strengths of an After-Action Review format. Use of different techniques will generate discussion and identify organization strengths and weaknesses as well as any training needed to improve proficiency. It is important to remember the following items:

- ❑ Be specific; avoid generalizations
- ❑ Be thorough, but do not dwell on issues unrelated to mission accomplishment
- ❑ Focus on actions
- ❑ Relate performances to the accomplishment of the exercise objectives
- ❑ Identify corrective actions for weak areas
- ❑ Continually summarize

4E - Discussion of Optional Issues

Optional issues that may be discussed during the course of the After-Action Review include the following:

- ❑ Player and leader/supervisor skills that affected the unit/organization or the individual performance (often it is best to discuss leader/supervisor skills in a separate meeting or review specifically for that purpose).
- ❑ Task performance, with a focus on identifying, those in which the unit/organization is proficient and those requiring further training. The intent is to focus training on mission essential tasks, supporting responder and leader tasks, and collective tasks that need improvement rather than training to known strengths. Although it is important for the unit/organization to sustain proficiency on tasks for which standards have been met, it is more important to train to established organizational standards on new or deficient mission-essential tasks.
- ❑ Statistics can supply objective facts, which reinforce observations of both strengths and weaknesses. Statistics and statistic-based charts should identify critical trends or issues and reinforce teaching points. An example for a Public Health laboratory would be to link the

number of samples taken to the number of correct agent identifications made. This would provide a good indication of a unit's survey skills. Judicious use of statistical feedback supports observations and provides a focus to review discussions.

Other topics that participants may need to discuss include the following:

- ☐ Player deployment
- ☐ Synchronization of dispensing clinics
- ☐ Information dissemination - consistent messages to the public
- ☐ Number of individuals receiving prophylaxis
- ☐ Number of individuals who would not have been given prophylaxis based on exercise results

4F – Discussion of Safety

Safety is every exercise participant's business and applies to everything a unit/organization does during an exercise. Safety will be specifically addressed in every After-Action Review and discussed in detail when it impacts player organizations' effectiveness or players' health.

4G – Closing Comments

After-Action Reviews are inherently difficult to end, so the facilitator reviews and summarizes key points identified during the discussions. The facilitator should end the review on a positive note, linking conclusions to future training. After this, the facilitator should leave the immediate area to allow unit leaders and participants time to discuss, in private, the just-completed After-Action Review and its implications.

Step 5 – Distribute Questionnaires

Questionnaires can also be used as tools to evaluate exercises. Typically, one of two types of questionnaires is utilized:

- ☐ Structured or set response options
- ☐ Unstructured or open-ended questions

Structured questions force a choice of specific answers. Unstructured questions are general and elicit responses that allow for a broad explanation. An example of a structured question is, "Did the exercise address the objectives adequately?" Answer choices should be provided and may include Always, Sometimes, Seldom, or Never. An example of an unstructured question is, "What are the five most important areas of concern in the emergency response system raised by the exercise?"

Questionnaires should be distributed and completed immediately after the exercise so the events that transpired are still relatively fresh in the participants' minds.

Step 6 – Initiate Follow-Up Actions

The final step in the sequence is to conduct a follow-up. Here the leaders/supervisors specifically want to accomplish the following:

- ☐ Identify new training needs
- ☐ Identify tasks requiring retraining
- ☐ Fix the problems (revise SOPs/EOPs)
- ☐ Identify any outstanding equipment needs

AFTER-ACTION REPORT (AAR)

The AAR is usually written by either the exercise facilitator or by a subject matter expert (or team of subject matter experts) involved in the exercise.

The purpose of the AAR is to document the observations and lessons learned from the exercise. The report is compiled from several sources, including comments made during the exercise Hot Wash, observations collected during the daily controller meetings, observations and comments submitted by players and controllers after the exercise is completed, and the material developed during the After- Action Review.

Procedurally, the AAR is developed using coordinating drafts and final versions. The coordinating draft should be prepared within 60 days of the exercise and should provide a basic format, lessons learned, and observations that define the exercise.

After comments are received from the field, they should be compiled, reviewed, and incorporated in the AAR, as appropriate. The final copy should be reviewed by the exercise sponsor before final publication and distribution. If any item is disputed, a message should be sent to the field requesting clarification and resolution of the issue. Once issues have been resolved, the final report should be published and distributed.



V. Integration Among Federal, State & Local Agencies

INTRODUCTION

Government and other agencies have mandated preparedness training because the human and monetary costs of disasters are so high. For example, Callaway Nuclear Power Plant, responsible for 15% of Missouri's electricity, must exercise their emergency plans yearly. Airports, hospitals, and other health facilities must conduct a field training exercise every two years to maintain their certification or license to operate.

State and local governments receiving federal funds from the Federal Emergency Management Agency (FEMA) must comply with certain exercise requirements. Program accomplishment is reported to FEMA through the State Emergency Management Agency (SEMA). As a rule, the requirements operate within a four-year window. The government's requirements emphasize exercises based on emergency functions rather than disaster types. Localities rationalize that they can adapt to any disaster when their emergency functions operate in top form. Currently, to satisfy requirements, jurisdictions test three emergency functions per year. To test these emergency functions, they will need to implement at least four exercises within the four-year timeframe, one field training exercise and three command post exercises. To accomplish these exercise goals, it is almost essential to conduct several preparatory activities (e.g., orientations, drills, or tabletop exercises).

COMMUNITY EXERCISE PROGRAM

Collectively, the three exercises discussed in Chapter 3 are exercises designed to ensure communities meet emergency preparedness goals.

A progressive community exercise program is comprehensive and is a commitment from various agencies to participate in increasingly challenging exercises over a period of time. The program is progressive in that one exercise builds upon another, resulting in a carefully planned sequence that will meet specified goals. The program is truly a community effort because it involves the participation of many community agencies, jurisdictions, and organizations not just police, fire, and public works.

THE INTERAGENCY RESPONSE PROCESS

Federal Response Plan (FRP)

The FRP establishes a process and structure for the systematic, coordinated, and effective delivery of federal assistance to address the consequences of any major disaster or emergency declared under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (42 U.S.C. §5121, et seq.). Within the framework of the FRP, the federal government can provide personnel, equipment, supplies, facilities, and managerial, technical, and advisory services in support of state and local disaster efforts.

The FRP is implemented through regional supplements developed by FEMA and other federal agency regional offices describing specific actions, operating locations, and relationships to address the unique needs of the region and states within the region. From time to time, an operations supplement to the FRP may be issued to address special events that merit advanced planning, such as the Olympics or Presidential Inaugurations.

The Federal Response Plan, originally implemented in 1988, underwent a number of revisions, and several additional plans were introduced in response to specific events. Additional plans included the Federal Radiological Emergency Response Plan, the National Contingency Plan, and the National Telecommunications Plan. During the Clinton Administration, a Terrorism Incident Annex was developed under authority of Presidential Decision Directives (PDD) 39 and 62. In 2003, the Department of Homeland Security was established. The Department of Homeland Security was mandated to develop a unified concept for federal disaster response to all types of disasters, natural, technological, and intentional. The National Response Plan, which is currently in "initial" form, will combine most existing federal plans, and has expanded the number of Emergency Support Functions (ESFs) from 12 to 15, to cover new threats.

Individual states and local jurisdictions have their own emergency operations plans describing who will do what, when, and with what resources. In addition, many voluntary, private, and international organizations have emergency or contingency plans. Local, state, and federal response responsibilities are outlined in Figure 5-1

Local Responsibilities	State Responsibilities	Federal Responsibilities
<ul style="list-style-type: none"> <input type="checkbox"/> Provide first response (911 dispatch of police, fire, HAZMAT, EMS, etc.) <input type="checkbox"/> Establish Incident Command <input type="checkbox"/> Assess situation to identify operational requirements <input type="checkbox"/> Centralize coordination among local agencies <input type="checkbox"/> Determine if requirements exceed local capabilities <input type="checkbox"/> Request mutual aid <input type="checkbox"/> Request state assistance 	<ul style="list-style-type: none"> <input type="checkbox"/> Respond to request for state assistance <input type="checkbox"/> Supplement, not supplant, local efforts <input type="checkbox"/> Centralize coordination among state agencies <input type="checkbox"/> Apply Governor's unique authority to do the following: <ul style="list-style-type: none"> <input type="radio"/> Issue a State Emergency Declaration <input type="radio"/> Mobilize the State National Guard <input type="radio"/> Redirect state resources to emergency response <input type="checkbox"/> Identify requirements that exceed capabilities <input type="checkbox"/> Request federal assistance 	<ul style="list-style-type: none"> <input type="checkbox"/> Respond to requests for federal assistance <input type="checkbox"/> Supplement, not supplant, state efforts <input type="checkbox"/> Centralize coordination among federal agencies <input type="checkbox"/> Identify requirements that exceed available federal capabilities within the region and request federal national assistance <input type="checkbox"/> Apply the President's unique authority to do the following: <ul style="list-style-type: none"> <input type="radio"/> Issue a Presidential Emergency Declaration <input type="radio"/> Mobilize DoD resources <input type="radio"/> Redirect federal resources to emergency response

Figure 5-1. Local, State, and Federal Responsibilities

EXERCISE PLANNING: KEY PLAYERS

The *Defense Against Weapons of Mass Destruction Act of 1996* (more commonly known as the Nunn-Lugar-Domenici legislation) tasked a variety of federal agencies and departments to engage in activities that better prepare local communities for the consequences of a terrorist act involving a WMD. Among others, the following were some of the results of this legislation:

- ☐ Health and Human Services (HHS) – Metropolitan Medical Response System development program
- ☐ Department of Defense (DOD) – Domestic Preparedness Program (subsequently, transitioned to the Department of Justice [DOJ])
- ☐ FEMA/National Fire Academy – Emergency Response to Terrorism: Basic Concepts Course

All executive branch agencies have roles in domestic preparedness and response relating to WMD. Presidential Decision Directives and subsequent Homeland Security Presidential directives have expanded these roles, especially for six agencies. These six agencies are the Department of Justice (DOJ), the Department of Energy (DOE), the Department of Defense (DOD), the Department of Health and Human Services (DHHS), the Environmental Protection Agency (EPA), and the Federal Emergency Management Agency (FEMA).

State, and Local Players

State and Local Authorities

At state and local levels, Emergency Operations Centers coordinate response activities. The State Emergency Operations Center (SEOC) coordinates response and leadership roles of the Governor, key staff, state department or agency heads, technical advisors, and representatives of private sector organizations.

The Missouri State Emergency Management Agency (SEMA) is responsible for the development and maintenance of the State Emergency Operations Plan (SEOP). Other responsibilities include planning, providing financial and technical assistance, and conducting emergency training exercises. Services are made available through local emergency managers supported by SEMA staff assigned to either specific geographical areas of the state or to specific tasks and projects.

In the event of an actual disaster or emergency, SEMA coordinates response and recovery in support of local government. In addition, state emergency managers manage and coordinate the FEMA recovery and mitigation grants following a disaster. In carrying out their missions, state emergency managers foster intergovernmental coordination at the local, state, and federal level.

Emergency operations will be initiated at the lowest level of government able to respond effectively to the situation. Therefore, local jurisdictions must develop comprehensive local emergency operations plans (LEOPs) to meet essential needs of those affected by an emergency or major disaster. Statutes require each jurisdiction to maintain an LEOP that has been approved by SEMA. These statutes are the basis of the state/local relationship, which is solidified by continued contacts and mutual assistance on day-to-day operations and during times of disasters. The state and local governments work together to provide training to local emergency management and response personnel. The same is true for the conduct of periodic exercises to test the state and local emergency management systems.

Federal Agencies

Department of Homeland Security (DHS)

The US Department of Homeland Security (DHS) was created by the Homeland Security Act of 2002 which was signed into law on November 25, 2002. This transferred 22 agencies into the Department and became operational on March 1, 2003. DHS has three primary missions: prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage from potential attacks and natural disasters."

Office of Domestic Preparedness

The US Department of Homeland Security's Office of Domestic Preparedness is the principal component of the Department of Homeland Security (DHS) responsible for preparing the United States for acts of terrorism. ODP was originally established within the Department of Justice in 1998, but transferred to the Department of Homeland Security through the act that established that department. Two critical responsibilities in fulfillment of this mission are the provision of specialized expert assistance to state and local governments in preparedness activities, and the development, delivery, and assessment of cross-discipline emergency responder exercises and training.

A core value of the ODP's Training and Technical Assistance Division is to promote the use of objective standards to ensure the quality of all terrorism training. Consistent with this, ODP has published the Emergency Responder Guidelines. The Guidelines were reviewed and approved by the Training Resources and Data Exchange (TRADE) Group.

The TRADE Group is an interagency group including representatives from the United States Fire Administration's (USFA) National Fire Academy (NFA), the Federal Emergency Management Agency, the Emergency Management Institute (EMI), the Federal Bureau of Investigation (FBI), the Environmental Protection Agency (EPA), the Department of Energy (DOE), HHS Office for Emergency Preparedness (OEP), and the Centers for Disease Control and Prevention (CDC). The mission of the TRADE group is to ensure a unified and coordinated federal training preparedness effort and to improve the consistency and the quality of training.

The Guidelines have been reviewed by the Office of Homeland Security and comport with the President's National Strategy for Homeland Security (July 2002). The Guidelines address the fundamental question of who needs to be trained on what to increase knowledge and enhance performance prior to, during, and following a terrorist incident. The Guidelines should be useful in defining training requirements, assessing the quality of training being provided to the various states' emergency responders, and gauging preparedness levels.

Federal Emergency Management Agency (FEMA)

FEMA, created in 1979, has the mission to provide an integrated approach to emergency management; specifically, to provide a single point of contact at the federal level where responsibility and accountability for all federal emergency management preparedness, mitigation, and response activities reside. In the mid-1980s, FEMA initiated a new series of exercises called "Response." The purpose of these exercises was to test and evaluate emergency management capabilities at all levels of government, thereby improving responses to major disasters.

FEMA offers a variety of courses to first responders and emergency managers at their Emergency Management Institute (EMI) in Emmitsburg, MD. The following are examples of the courses offered by FEMA that pertain to exercise development:

- ❑ Design, Course #G120
- ❑ Exercise Evaluation Course, Course #G130
- ❑ Exercise Control/Simulation Course, Course #G135
- ❑ Exercise Program Manager/Management Course, Course #G137
- ❑ Exercise Controller/Simulator Workshop in Emergency Management (WEM), Course #G250.8

A significant portion of the training offered is conducted by state emergency management agencies through cooperative agreements with FEMA. Other options include training courses offered by the regional FEMA offices, distance learning programs such as the Independent Study Program, and the Emergency Education Network (EENET). For more information about EMI courses, visit <http://www.fema.gov/emi>.

FEMA Regional Offices

FEMA has ten regional offices and two area offices. Each regional office serves as the key interface between FEMA, other federal agencies, and the state and local authorities. In addition to regional oversight responsibilities during actual disasters, their general roles and responsibilities include assisting FEMA Headquarters in the development of concepts and policies; the design, conduct, and evaluation of exercises within their respective regions; and the implementation of Emergency Management Program Grants (EMPG).

States receive the EMPG shortly after the beginning of the federal fiscal year, keep a percentage for the administration of the grant program, and then allocate the remainder to those counties that participate and apply for the grant funds. Prerequisites for receiving EMPG funds are an active Emergency Management Commission (membership includes the sheriff, mayors, and a supervisor), the appointment of a County Emergency Management Coordinator by the Emergency Management Commission, and a certified budget. The states provide FEMA a work plan for the 12-month period, in which the states promise to accomplish certain things in exchange for the FEMA funding. Products promised to FEMA include training, planning, and exercises. FEMA regional offices furnish valuable input into the development of various programs that are then implemented in the field. There is likely to be an increased focus on operations to include grants for EOC upgrades, response capabilities, and encrypted communications equipment.

FEMA regional offices also serve as liaisons between states in the region, FEMA Headquarters, and other federal agencies, to ensure that information is shared between them. The regions assemble and provide state and local-level exercise schedules to FEMA Headquarters.

Department of Health and Human Services, Office of the Assistant Secretary for Public Health Emergency Preparedness (ASPHEP)

The Assistant Secretary for Public Health Emergency Preparedness (ASPHEP) serves as the Secretary's principal advisor on matters related to bioterrorism and other public health emergencies. ASPHEP also coordinates interagency activities between DHHS; other federal departments, agencies, and offices; and state and local officials responsible for emergency preparedness and the protection of the civilian population from acts of bioterrorism and other public health emergencies. Key functions include planning and emergency response, research and development coordination, and assistance with state and local preparedness. Refer to <http://www.hhs.gov/asphep/> for further information.

Veterans Administration – Emergency Management Strategic Healthcare Group (EMSHG)

The mission of EMSHG is to provide technical guidance, support, management, and coordination necessary to conduct programs ensuring health care for eligible veterans, military personnel, and the public during DOD contingencies and natural, manmade, and technological emergencies. EMSHG operates from headquarters in Martinsburg, WV with a field office of 42 Area Emergency Managers (AEMs) located at Veteran Administration Centers throughout the nation. See <http://www.va.gov/EMSHG/> for additional information including conferences, exercises, and symposiums.

Department of Defense

All military installations conduct disaster exercises with some regularity. Communities located near these installations may be requested to participate in those exercises, especially those community response agencies that might be called on in a real event.

In a large-scale disaster, or an exercise simulating such a catastrophe, military forces of the US government might participate. The “action arm” of the military under those circumstances would be the US Northern Command (USNORTHCOM), located in Colorado Springs, CO. Military personnel and units from all the services may be deployed to the affected area and fall under the direct control of the Joint Task Force – Civil Support (JTF-CS) or other task force operationally controlled by USNORTHCOM. Military forces serve in support of state, local, or other federal agencies, and do not normally participate in law enforcement functions. Military forces are usually considered “last in, first out” federal support. Except in the most unusual or dire circumstances, participation by active duty military units or personnel would be limited to specialized detection or identification units, such as the Chemical/Biological Immediate Response Force (CBIRF), Technical escort Units (TEUs), or environmental testing or evaluation units.

Federal Bureau of Investigation/Department of Justice – WMD Countermeasures Unit

The FBI assists federal, state, and local first responders with planning, training, and exercises necessary to respond to a conventional or non-conventional WMD incident.

The FBI assists federal, state, and local first responders assessing and responding to conventional or non-conventional WMD threats and incidents. This is done via the FBI's threat assessment process in which WMD threats are analyzed behaviorally, operationally and technically.

During the threat assessment process, the FBI reaches out to a multitude of federal, state, and local agencies that are able to provide and share information and analysis of the threat. Additionally, the FBI maintains historical information on past WMD threats and current on-going threats from terrorist groups and individuals. This, along with the threat assessment, aids in determining the credibility of a particular threat. WMD units in the FBI also manage nuclear biological and chemical programs, which are responsible for the development of policies and procedures through aggressive liaison with other agencies.

The FBI also has WMD response assets in all 56 FBI Field divisions. In particular, each division has a WMD Coordinator who is responsible for liaison with local WMD first responders and to being their conduit between the local community and FBI Headquarters.

The FBI also has the Hazardous Materials Response Unit (HMRU), which is a national asset that assists in scientific advice during the threat assessment process and can deploy nationwide to collect evidence in a HAZMAT environment. The FBI also has Hazardous Materials Response Teams (HMRTs), capable of supporting the HMRU mission, in one third of the FBI field offices.

National Disaster Medical System (NDMS)

Formerly under DHHS, NDMS was re-established under DHS when that agency was created. NDMS is a cooperative asset-sharing program among federal government agencies, state and local governments, and the private businesses and civilian volunteers to ensure resources are available to provide medical services following a disaster that overwhelms the local health care resources.

The NDMS is a federally coordinated system that augments that Nation's emergency medical response capability. The overall purpose of the NDMS is to establish a single, integrated national medical response capability for assisting state and local authorities in dealing with the medical and health effects of major peacetime disasters and providing support to the military and Veterans Health Administration medical systems in caring for casualties evacuated back to the U.S. from overseas armed conflicts. In addition to Disaster Medical Assistance Teams (DMATs), including specialized teams, over 2,000 hospitals nationwide have pledged to provide up to 100,000 hospital beds in the event of a national disaster. Forward movement through NDMS to these hospitals is accomplished through the DOD's US Transportation Command, which utilizes the US Air Force airlift capabilities.

Department of Energy (DOE)

The DOE has important national security responsibilities. DOE maintains the safety, security, and reliability of the US nuclear weapons stockpile, without underground nuclear testing. DOE also manages and safely dismantles excess nuclear weapons, disposes of surplus fissile nuclear materials, and ensures the security of nuclear assets. DOE provides policy and technical assistance to curb global proliferation of WMD, emphasizing US nonproliferation, arms control, and nuclear safety objectives in Russia and the newly independent states, as well as worldwide. DOE also develops and ensures the safety and reliability of nuclear reactor plants to power Navy warships. To accomplish its mission, DOE conducts terrorism/WMD exercises nationwide.

Environmental Protection Agency (EPA)

The EPA supports federal counterterrorism programs by helping state and local responders to plan for emergencies, coordinating with key federal partners, training first responders, and providing resources in the event of a terrorist incident. EPA offices involved in these efforts are the Chemical Emergency Preparedness and Prevention Office (CEppo), the Office of Emergency and Remedial Response (OERR), the Office of Radiation and Indoor Air (ORIA), and the National Enforcement Investigations Center (NEIC). Refer to <http://www.epa.gov/ceppo> or <http://www.nrt.org> for more details.

Non-Governmental Organizations (NGOs)

Involvement of volunteer agencies and members of the private sector in exercises is completely voluntary; however, their participation is strongly encouraged. Should they choose to participate, volunteer agencies and members of the private sector will be expected to contribute to the needs assessment process and EOP/SOP development, as well as participate in state, local, and national-level exercises, as appropriate.

Many national level volunteer organizations are members of the National Voluntary Organizations Active in Disasters (NVOAD) (<http://www.nvoad.org/>). Two NGOs that may be appropriate to integrate into exercise plans are discussed here. Each typically has points of contact (POCs) at the state and local levels.

American Red Cross (ARC). In the past, the ARC has responded to the changing needs of the nation with traditional services, such as war relief, nursing and health services, and disaster relief, along with services to meet contemporary needs, such as AIDS education and workplace safety programs. Today, the ARC provides a variety of emergency related services, including disaster preparedness and relief, health and safety programs, blood services, and military and social services. Community disaster education programs are offered to help people learn to prepare for and respond to

emergencies. The ARC has a congressional charter, which provides the authority for the organization to carry out its work, but the ARC receives no government funds. The work of the ARC is made possible by the voluntary support of the American people through their donations of time, blood, and money.

Salvation Army. The Salvation Army's service in times of disaster is frequently overlooked. A prime example of this service was northern Ohio Salvation Army's provision of more than \$750,000 for relief activities in southern Florida in the aftermath of Hurricane Andrew. Assistance was given to over 1,219,000 people in Dade County alone. Often the Salvation Army will dispatch its Mobile Emergency and Disaster Services canteens in response to emergency situations. These units attend to those affected by the event and minister to workers responding to it, such as police and firefighters. Some of the services provided include registration and identification; the distribution of food, clothing, and supplies; and the dispensation of spiritual counseling.

Appendix A. Exercise Enhancements

There is no question that realism adds to the learning experience of any exercise. A well-written public health emergency scenario, combined with the right personnel and enhancements to make the exercise as real as possible, will provide an unforgettable learning experience. Realistic experiences promote learning and retention.

Exercise Enhancements

- ☐ Serve to enhance realism
- ☐ Require creativity
- ☐ Can be developed with minimal costs

The purpose of an exercise is to test personnel, plans and equipment before an actual disaster by simulating an emergency in as realistic a manner as possible. A variety of enhancements can help achieve this realism. For example, a FTX/FSX makes use of actual equipment and locations, while a CPX/FX or TTX must rely on materials or devices brought into the room. It is usually not necessary to expend a lot of resources to add quality enhancements to your exercise. Resources can include everyday items that are currently available in the players' EOC/Command Post. Creativity is the key.

Communications

Various types of electronic equipment can be used to communicate the narrative, advance the scenario, and transmit some of the messages from simulators. In an exercise striving for reality, such as in a complex field training exercise, messages should be transmitted the way they would in a real emergency.

Consider the following electronic communication devices:

- ☐ Hard-line phones
- ☐ Radio phones
- ☐ Hotline dedicated phones
- ☐ Portable hand-held radios
- ☐ Fax machines
- ☐ Cellular phones
- ☐ Pagers
- ☐ Computers/Email
- ☐ Walkie-talkies
- ☐ Laptop computer for internet access

Videotapes and Slides

Videotapes and pictorial images, although more difficult to obtain, can also enhance the realism of your SNS exercise. Videotapes can provide a very realistic presentation of a disaster and can be used to introduce the narrative, give updates, provide education at clinic sites and interject scenario development. News reports and interviews with politicians, as well as the public, can also lend realism. Images can be used for the same purposes. Ideas for videotapes and slide usage are as follows:

- ☐ Prerecord/tape news broadcasts depicting the disaster
- ☐ Tape interviews with “victims” and show them as televised news clips as part of the exercise
- ☐ Tape news broadcasts and “play” them on the radio
- ☐ Simulate news conferences
- ☐ Present a video showing effects of the disaster
- ☐ Provide updates to news media
- ☐ Pre-tape educational messages for biological agents
- ☐ Pre-tape educational messages of antibiotic treatment

These items serve to portray a convincing picture of what might be going on outside the exercise room. Be careful, however, to avoid getting carried away with your props to the extent that they overpower the exercise. Remember to always start with - **THIS IS A DRILL**.

Computerized Tracking Systems - MOHASIC

The Missouri Health Strategic Architectures and Information Cooperative (MOHSAIC) database will be used to track and manage the SNS materiel. The web-based system allows tracking of materiel from the RSS and ADS sites, to the LPHAs and then to the various PODs. The system will be used by the LPHAs to electronically place their order to the MDHSS DSR. MDHSS must be involved for the LPHA to exercise this component.

Miscellaneous Equipment and Supplies

Planners are sometimes so focused on dramatic effects that they often overlook common office material available for little or no expense. Items in this category include things such as an overhead projector, proxima copy machines, portable radio pagers, cellular phones, pens, pencils, telephone directories, EOC phone lists, etc. Maps, charts, and other visual displays (status boards, blackboards, whiteboards, and flipcharts) contribute to the realism of an exercise.

GIS mapping can provide context and detail to a scenario. Because they are essential to handling an actual disaster, they are necessary for all types of exercises as well. Even in a tabletop exercise, maps

provide useful information and give players a clearer picture of the simulated event. The maps may be reproduced on paper for individual use or displayed on a wall. The types and number of maps required depend on the exercise type and the hazard being tested. MDHSS can supply GIS maps showing RSS/ADS and local dispensing sites. GIS mapping will also be utilized to track epidemiological data and disease investigation.

The following is a non-inclusive list of maps that may be useful:

- ☐ City street maps
- ☐ County street maps
- ☐ Waterways
- ☐ Sewer maps
- ☐ Water/electric/gas maps
- ☐ Facilities maps
- ☐ Locations of scenario-related agencies/schools/police stations, etc.

Good maps can be obtained from various sources. Try obtaining them from places such as the local City Planning Commission, Department of Highways, Engineering Department, and Public Works Department. Charts are important in the accumulation and sharing of information, whether it is in an EOC or a Command Post (CP). Charts allow everyone to quickly comprehend what actions have taken place, as well as what resources and personnel are available. The types of charts utilized will vary with the type and scope of the exercise, but should be the ones that will be used in an actual emergency.

People and Props

In a FTX/FSX, the sense of reality occurs through the use of actual equipment in an actual setting. Designers of FTX/FSXs often bring in real people or stage props to enhance their exercise. For example, a simulated disaster scene could use fake smoke for plumes, inert explosive devices, liquids such as chocolate syrup to simulate a chemical agent, powders to simulate biological agents, people to play the part of victims (properly made up to show wounds), burnt boards and beams placed around rooms, and so forth. Obviously, when using such props, safety is paramount.

Some jurisdictions utilize a great deal of ingenuity in adding realism to their exercises. Some even choose to create model cities for use during their TTXs or collect mannequins to substitute for real people in dangerous situations. Only the budget, safety considerations, and imagination limit these enhancements.

Many LPHAs and LEOCs utilize actual local law enforcement in full SWAT gear to protect the SNS materiel and dispensing site during the exercise. This adds a realistic effect to local citizens who role-play, or observe the exercise.

Dispensing sites should be established and set-up as they would be during an actual event.

Acquisition of Resources

One of the formidable problems exercise designers often face is how to add enhancements (people, equipment, and materials) to their exercise within a limited budget. Consider soliciting volunteers from other agencies in the community, as many are civic-minded and willing to help out by lending equipment or providing volunteers to serve as victims and role-players. The following are some suggestions of places to begin:

- ☐ Hospitals
- ☐ Business and Industry
- ☐ Boy & Girl Scouts
- ☐ Amateur Radio Club
- ☐ Elks, Lions, or other Clubs
- ☐ Schools and Colleges
- ☐ Salvation Army
- ☐ Red Cross
- ☐ Police Departments
- ☐ Fire Departments
- ☐ Public Transportation
- ☐ Churches

Appendix B. Sample Scenarios

SCENARIO: NATURAL PUBLIC HEALTH DISASTER

Rains have been particularly heavy this spring across the entire state. Standing water, burgeoning riverbeds, and other low lying areas have served as breeding grounds for mosquitoes. Consequently, the state has witnessed a resurgence in West Nile Virus, previously controlled through standard vector elimination techniques.

Concern exists among the public health community about a new strain of human influenza, which apparently has arisen from avian influenza in the Far East that has “jumped” species. Daraconian vector and reservoir control methods in Vietnam, Thailand, China, and other locations do not seem to have arrested the relentless progression of this disease.

The first cases appeared suddenly, in St. Louis, Kansas City, and Springfield – within a 24 hour period, over two hundred individuals, above the expected norm for this time of year, presented to area hospitals in these communities, all with relatively severe symptoms of fever, chills, cough, and shortness of breath. Approximately 10% of the population required admission to acute care centers, and of these, another 20% were ill enough to require intensive care monitoring.

Similar to the rapidity in which the Spanish influenza swept the nation in 1918, the numbers of casualties increased exponentially. Within 24 hours of the first patients, a total of 1500 adults of all ages, and another 500 children, had been given the presumptive diagnosis of influenza. This number doubled over the ensuing 24 hours. Of the nearly 5000 identified clinical cases, 800 required admission, and 250 required ICU admission or intubations. By now, the disease had also spread to smaller metropolitan areas such as St. Joseph, Columbia, and Cape Girardeau. Most hospitals in the state are now in crisis. Communities are in need of not only the existing influenza vaccination, but also treatment, equipment and supplies for those ill enough to require hospitalization.

By the third day of the outbreak the following potential health and medical problems confront the state:

- ☐ Mass care, mass fatality, and mass prophylaxis
- ☐ Public health risk communications
- ☐ Containment and control strategies, including isolation and quarantine

SCENARIO: NUCLEAR POWER PLANT ACCIDENT

The Callaway Nuclear Power Plant, located near Fulton, MO, is a Standardized Nuclear Unit Power Plant System (SNUPPS), using a Westinghouse four-loop pressurized water reactor and a General Electric turbine-generator. The plant went into service December 1984. Uranium is used in a process called nuclear fission that heats water into steam. The steam, under pressure, spins the blades of a turbine, which in turn spins a generator that creates electricity. The plant is five miles north of the Missouri River on a plateau 300 feet above the normal river level. AmerenUE owns 7,200 acres of land at the site, 6,300 of which are administered by the Missouri Department of Conservation as the Reform Conservation Area. More than 70 locations in four states were studied before the Callaway County site was selected. The reactor containment compartment is designed to "contain" a pressure of 60 pounds per square inch to keep radioactive material from escaping in a worst-case accident, and is also designed to protect reactor and major nuclear components from external hazards, such as a tornado.

On the evening of March 4th, a series of failures led to loss of primary and backup water cooling, with an eventual core meltdown less than six hours after the initial failure was noted. Approximately two hours prior to containment breach (at 80 psi measured), an evacuation order was issued to all citizens within 25 miles of the plant. Unfortunately, due to the time of the failure (0400), most of those potentially affected were asleep.

The following data is based on studies performed by Sandia National Laboratory under contract to the Nuclear Regulatory Commission (1982). The figures provided here are based on a core meltdown accident in which the reactor containment is breached directly to the atmosphere and all installed safety mechanisms fail.

- ❑ Peak early fatality radius – 17.5 miles
- ❑ Early illness radius – 35 miles
- ❑ Maximum peak early fatalities – 11,500
- ❑ Maximum peak early illnesses – 32,000

Issues facing the public health and medical sector include the following:

- ❑ Evacuation of area hospitals, rehabilitation centers, and nursing homes
- ❑ Mass prophylaxis (KI) of responders and those who were not able to evacuate with the identified timeframe of safety
- ❑ Epidemiological projection and exposed victim longitudinal tracking
- ❑ Special needs sheltering and alternate care facility locations
- ❑ Mass fatality management
- ❑ Environmental surety
- ❑ Crisis counseling and long term mental health needs

SCENARIO: TOXIC INDUSTRIAL SPILL

Union Pacific Railway train #33, a 106-car train carrying dangerous chemicals (caustic soda, propane, chlorine, and organophosphate insecticides), rolled through Missouri's rich farmland and heavily-populated areas near metropolitan St. Louis. As the train passed the St. Charles area, about 15 miles north of St. Louis, lack of lubrication in a wheel bearing produced high levels of friction, which burned the journal bearing causing the stub of the axle to break off. The 33rd car lost an axle and left the track. Twenty-three other cars followed. Some propane cars burst into flames. That was at 11:53 p.m.

Tankers containing the organophosphates were punctured, spilling their chemicals onto track beds. Flammable liquids and vapors ignited, causing a massive explosion of a tank car. Between five and 10 minutes later, a second explosion erupted. An explosion in another propane tank car hurled the car in the air. Five minutes later, another explosion in a propane car occurred. Near the explosion, a green haze was seen drifting in the air.

The local police chief ordered 3,500 residents living closest to the derailment to leave the area for their own safety. This evacuation—the first of 13 in a 20-hour period—began about two hours after the car went off the tracks. Later, areas of evacuation were widened. At 2:00 a.m., St. Louis County officials sent sound trucks to assist in telling residents of the evacuation. Throughout the night and early morning as machinery arrived and plans developed, HAZMAT experts to handle the dangerous substances also entered the scene. They agreed that it would be impossible to seal the chlorine tanker leak until the propane fires had burnt themselves out.

Just before 5:00 a.m., officials at the scene decided that the seriousness of the situation was not diminishing. About an hour later, the incident commander issued another evacuation notice, involving a much wider area and including the local hospital and two adjacent nursing homes. As winds shifted, new dangers were presented, forcing more and more residents to join the exodus—some with packed luggage and others with Sunday dinner abandoned on the stove. At the day's end, about 218,000 persons had left their homes, six nursing homes, and three hospitals. A total population of 284,000 was required to evacuate. Additionally, several thousand citizens who delayed after evacuation orders were given were exposed to various amounts of organophosphates. Many require hospitalization, many more require treatment, and even greater numbers of unaffected now seek evaluation for possible exposure and reassurance that they will not become ill.

Issues for the health and medical sector include the following:

- ☐ Surge in patients requiring emergency decontamination and treatment
- ☐ Hospital, nursing home, and rehabilitation center evacuations
- ☐ Alternate care sites
- ☐ Environmental surety
- ☐ Special needs shelters
- ☐ Community psychological counseling
- ☐ Longitudinal tracking of potentially exposed residents

SCENARIO: INTENTIONAL INFECTIOUS DISEASE OUTBREAK (NOT CONTAGIOUS)

The Missouri Tigers were playing the Nebraska Cornhuskers in what was touted to be the game of the century. With both teams rated in the top ten nationally, the winner would surely be the Big Eight leader, with a guaranteed spot in the Orange Bowl.

The American Patriots, a fringe militia group, had been waiting for just such an event to make their comeback. After the Murrah Federal Building bombing in 1995, the group went deep underground. It was time to make a re-entry.

The night before the game, the selected team members checked the weather, identifying that it would be perfect for remote placement and release of the cargo—anthrax spores in a slurry mix. Although there were not a great many wooded areas close to the stadium, one small stand of trees was identified, and the team placed the remote controlled device high in one tree, and cleared leaves away from higher branches to allow a clear release.

The 50,000 fans at the game on Saturday were never aware. At 2:00 p.m., just before halftime, the device was triggered and it released its deadly spray.

The first patients arrived in the University of Missouri Medical Center emergency room late Sunday night—an elderly couple who presented with severe fevers, chills, myalgias, chest pain, and shortness of breath. Both were hospitalized for sepsis. By morning, both were dead. By then, the ED had begun experiencing the beginning of the onslaught of patients, of all ages, with similar symptoms. By noon, over 25 patients, mostly college students had been admitted, and the ICU was full. Other area hospitals were having similar experiences. By 4:00 p.m., infectious disease physicians and the hospital epidemiologist had concluded that all victims were likely infected at the same time, at the same location, and by the same pathogen, and unanimously reached the conclusion that a terrorist attack had probably occurred at the football game. They also ranked *B. anthracis* as number one on their list of causative agents, due to the presentation of the illness.

Actions occurred rapidly at that point, with the Local Public Health Agency contacting the Missouri Department of Health and Senior Services operations center. By 8:00 p.m., the Governor had declared a state of emergency and mobilized the National Guard, a Presidential declaration was in the offing, and the Strategic National Stockpile and accompanying Technical Advisory Response Unit had been deployed.

Issues to be addressed at this point could include the following:

- ❑ MDHSS activation
- ❑ Outbreak investigation and epidemiological projection
- ❑ Reception, storage, security, distribution, and dispensing of SNS stocks
- ❑ Mass care, mass fatality, and mass crisis counseling
- ❑ Interagency coordination at the local, state, and federal level

SCENARIO: INTENTIONAL INFECTIOUS DISEASE OUTBREAK (CONTAGIOUS)

Branson, MO was a logical soft target with the potential for severe national consequences. With its high tourist flow, any disease introduced to the population would surely allow spread to the majority of major metropolitan areas.

Mumtaz Qazi, an unmarried, young and healthy male was selected to spread the infectious disease. Although he was a seasoned terrorist, he had maintained a low profile since entering the country through Canada with a false passport. His precious cargo was transported to Springfield hidden in a talcum powder container. On the 1st of May, after praying to his God, he scraped his skin and poured the contents of the talcum powder container on the open wound. Infection with smallpox was guaranteed. He stayed at his base of operations—a budget hotel in Springfield—only calling his contact once, when the symptoms began, to report that he was not feeling well. By the 9th of May, Mumtaz was experiencing a severe fever, backache, and a cough. The onset of these symptoms was his signal to move.

To help himself withstand the rigors and pain, Mumtaz took large quantities of ibuprofen. He then made his way to the selected “show,” which was a Kenny Rogers concert. Because the exact date he would need to move was not known in advance, Mumtaz had purchased tickets for various events over a period of several days.

At the show, Mumtaz circulated among the crowd and purposely did not shield his mouth while coughing. Despite taking medications, Mumtaz had to leave the concert early. Practically delirious, he failed to navigate the roads successfully back to his hotel and crashed his vehicle.

The physicians at St. John’s Regional health Center in Springfield, where Mumtaz was taken, were aware that something was amiss—trauma patients rarely had significant fevers. However, they failed to notice the macular rash on his face, and it was not until his fevers continued to spike and the rash had progressed over the next two days to the more characteristic rash of smallpox, that they called for a dermatology consult. Clinically, the dermatologist and the infectious disease specialist were sure their patient had been exposed to an orthopox; however, with Missouri’s recent experience with monkey pox, they hesitantly called in public health officials to assist in ruling out smallpox.

Issues to be addressed could include the following:

- ❑ Diagnostic protocols
- ❑ Reporting, notification, and activation of response systems
- ❑ Outbreak investigation, contact tracing, and epidemiological projection
- ❑ Containment strategies, including mass vaccination, isolation, and quarantine
- ❑ Public health information and communication
- ❑ Mass care, mass fatality, and mass crisis counseling
- ❑ Criminal investigation and forensics

Appendix C. Acronyms

AAR	after-action report
AEM	Area Emergency Managers
AIDS	Acquired Immunodeficiency Syndrome
ARC	American Red Cross
ASPHEP	Assistant Secretary for Public Health Emergency Preparedness
ATSDR	Agency for Toxic Substances and Disease Registry
CBRNE	Chemical, Biological, Radiological, Nuclear, Explosive
CDC	Centers for Disease Control and Prevention
CEPPO	Chemical Emergency Preparedness and Prevention Office
CST	Civil Support Teams
CP	Command Post
CPX	Command Post Exercise
DECON	Decontamination
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
DMAT	Disaster Medical Assistance Teams
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
EENET	Emergency Education Network
EMPG	Emergency Management Program Grants
EMS	Emergency Medical System
EMSHG	Emergency Management Strategic Healthcare Group
EOC	Emergency Operations Center
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
ESF	Emergency Support Functions
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FRP	Federal Response Plan
FSX	Full-Scale Exercise

FTX	Field Training Exercise
FX	Functional Exercise
HAZMAT	Hazardous Material
HMRT	Hazardous Materials Response Team (FBI)
HMRU	Hazardous Materials Response Unit (FBI)
ICS	Incident Command System
ID	Infectious Disease
JOC	Joint Operation Center
JTF-CS	Joint Task Force – Civil Support
LEOP	Local Emergency Operations Plan
LPHA	Local Public Health Agency
MDHHS	Missouri Department of Health and Senior Services
MO EOP	Missouri State Emergency Operation Plan
MSEL	Master Scenario Event List
NDMS	National Disaster Medical System
NEIC	National Enforcement Investigations Center
NFA	National Fire Academy
NGO	Non Governmental Organization
NVOAD	National Voluntary Organizations Active in Disasters
OCE	Observer/Controller/Evaluators
ODP	Department of Justice’s Office for Domestic Preparedness
OEP	DHHS Office for Emergency Preparedness
OERR	Office of Emergency and Remedial Response
ORIA	Office of Radiation and Indoor Air
PDD	Presidential Decision Directives
POC	Point of Contact
SEMA	State Emergency Management Agency
SEOC	State Emergency Operations Center
SOP	Standard Operating Procedure
TRADE	Training Resources and Data Exchange
TTX	Tabletop Exercise
USFA	United States Fire Administration
USNORTHCOM	US Northern Command
VA	Department of Veteran Affairs
WMD	Weapons of Mass Destruction